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RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

SATURDAY, MARCH 15, 1856.

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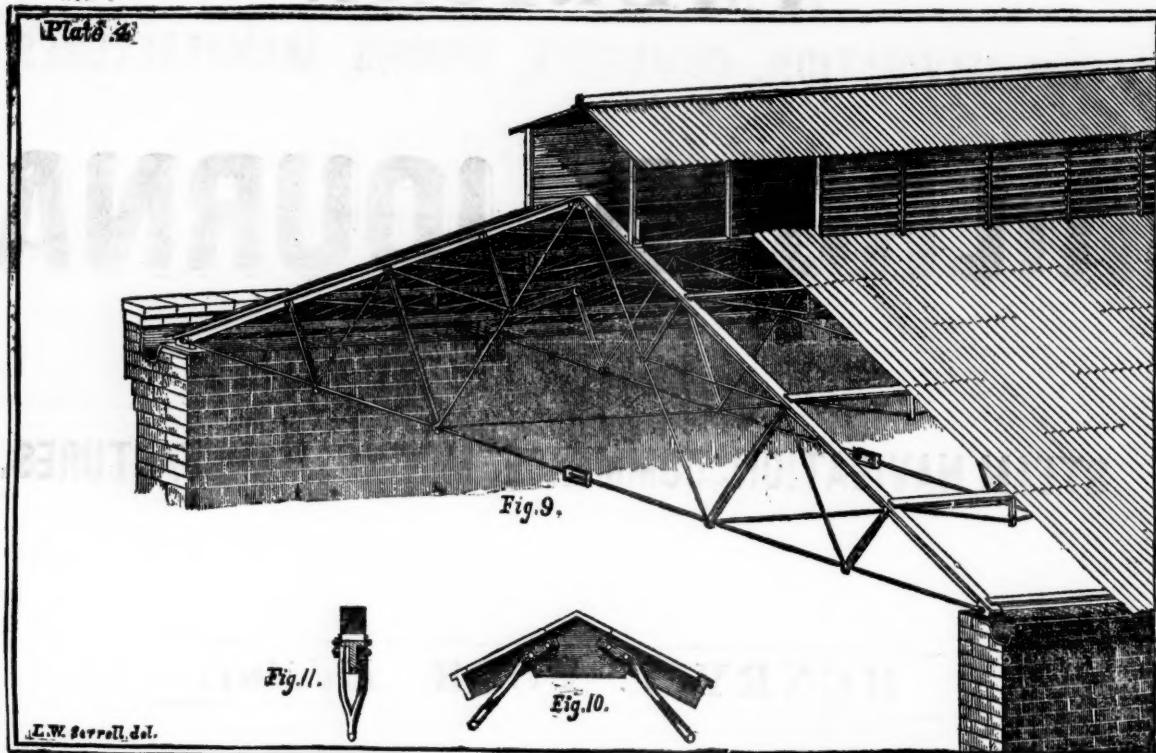
ESTABLISHED IN 1831.

NEW-YORK:

PUBLISHED WEEKLY, BY

JOHN H. SCHULTZ & CO.
Front Room, Third Floor,
No. 9 Spruce Street.

ROOFING.



THE subscribers, manufacturers and importers of **PATENT GALVANIZED TINNED IRON**, respectfully invite the attention of railroad companies and others interested in the construction of Fire-proof Buildings and Roofs, to this material, which is highly recommended for strength, durability, and lightness, combined with elegance in appearance. The advertisers can refer particularly to Roofs they have

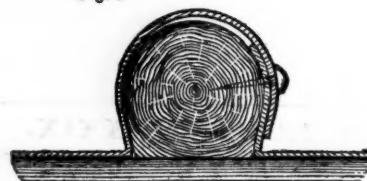
erected in the New York Navy Yard, also to that of the New Jersey Railroad and Trans. Company, Jersey City. In Great Britain it is used at all the railroad depots and navy yards in enormous quantity.

The corrugated sheets, as on the above iron framed roof, are equally suited to lay upon wood framing, either straight, or curved.

Plain sheets are prepared to lay on boarded roofs (such as have had tin coverings) by making flute on the side so as to fasten to a wood roll, reaching from ridge to eaves and placed between each tier of sheets, see figs. 6 and 8 below. The transverse joints are secured as shown by fig. 7.

Estimates and designs for Buildings and Roofs, &c., &c.

Fig. 6.



$\frac{1}{2}$ full size.

Fig. 7.



$\frac{1}{2}$ full size.

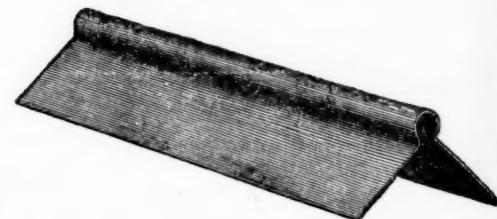
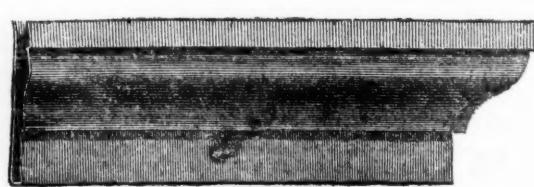
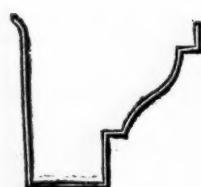
Fig. 8.



$\frac{1}{2}$ full size.

Galvanized Iron Cornices to any size or pattern, Ridge Caps, and Spouts.

TELEGRAPH AND FENCING WIRE, BLACK SHEET IRON, SHIPS' IRON WORK,
LIGHTNING RODS. CORRUGATED. SPIKES, NAILS, &c., promptly galvanized.



MARSHALL LEFFERTS & BROTHER,
Corner of Broad and Beaver sts., NEW YORK.

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PUBLISHED WEEKLY BY J. H. SCHULTZ & CO., AT NO. 9 SPRUCE ST., NEW-YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE
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MESSRS. ALGAR & STREET, No. 11 Clements Lane, Lombard Street, LONDON, are the authorised European Agents for the *Journal*.

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., NO. 9 SPRUCE ST.

New York, Saturday, March 15, 1856.

ERRATUM IN LAST NUMBER.—146th page 2d col. end of first paragraph for "gentlemen who only see what merits them," read: "gentlemen who only see what hurts them."

In the advertisement of PASSAVANT, ARCHER & Co. published last week their address should have been given as West 25th Street instead of West 21st Street.

Railroad Management—*Economy in Operation.

The Railroad Companies of Massachusetts are just now very much exercised over the fact that their lines are not as profitable for investment as at one time they promised to be. They have with great unanimity proposed an expedient; and so far as any degree of earnestness is concerned, they propose but one—namely, to raise the prices for doing work. In a further discussion of this question, we repeat what we said last week; that, "before they take this step they are under high obligations to analyse thoroughly the principles of management by which they have been governed." We do not start with any assumption that this duty has been neglected, but

*In an article on this subject in last week's issue, we made an error in calculation. On page 146, second column, near the top, "66,747 tons of coal of only," should have been 89,480 tons; and the price of fuel should have been 16.5 cts. instead of 12.5.

we shall carefully and fairly examine certain statements that have lately been issued by the officers of those roads, and ascertain from them what has been the real course adopted, in making investigations into the causes that produce the universal depreciation in stocks. The stockholder has every right to know if the money he invests be properly protected by *competent management*. These statements are in every case official, and bear the unfortunate evidence of having emanated from parties not truly familiar with the practical operations of a railroad. So that although very honorable intentions characterise the recommendations of Reform, we are met with a painful amount of ignorance as to what any branch of labor performed by the roads may be costing or earning.—The loosest guesses are made as to the actual expense of carrying a ton of freight or a passenger. And throughout these papers we are met by constant acknowledgements of a want of accurate information, or, when we do not find this we observe assumptions independent of particular facts, and founded on general impressions. We do not wish to be misunderstood. We are not prepared to condemn the advice given as unnecessary, but we do wish to impress on all parties the necessity for a more decided attention to details, the importance of accuracy when dealing with figures; more especially when the amount to be arrived at is so minute as the value per mile of transporting freight or passengers.

We wish with others to ascertain what is of value in the opinions to which railroad men have committed themselves, and we wish further to ascertain if the reforms proposed are comprehensive—whether improvements may not yet be made in the operating of roads, that should be more particularly indicated than is expressed in the statements under consideration.

In order to do this, we propose:—

First.—To point out some of the errors and fallacies that have crept into these Reports.

Second.—To direct attention to those portions that are in any manner reliable.

Third.—Suggest some more definite, if more trifling reforms in the details of operating the Roads.

We observe, as already remarked, a general indefiniteness in the statement of facts from which deductions are drawn. They are broad assertions,

unsupported by nicely ascertained truths. And, consequently, the inferences, besides being in many cases hastily drawn, are in others fallacious. Much of this sort of mischief comes from *averages* which are so extremely dangerous as to warrant their use only when there is no alternative *unless the elements be of the most perfectly homogeneous character. Thus in Mr. Appleton's remarks at a meeting of stockholders, that the rail has to "be re-laid in from five to ten years," is a difference between extremes of 100 per cent. If the first figure be correct the track must be re-laid twice in ten years. But perhaps Mr. Appleton means that there is a figure between these two that indicates the average durations of the rail. If so there is no value in the statement, *to any particular company*. Is the rail of the Fitchburg Road to be renewed once in 7.5 years? The State Report shows that they have done an amount of work the last year equivalent to running over the whole track 6,666 times. Of what value is the formula to the Worcester Company, who have made 12,142 complete transits over their line?

In the same manner, Capt. Swift (page 9) has aggregated the work done by the roads, and presents us with the average expense of carrying a ton of freight, or a passenger one mile. Now, so far as this method is used to show a general falling off in net earnings it is well enough, but when from such a cluster he deduces a principle to govern the management of all the roads, he is certainly in error—as is sufficiently illustrated in the previous instance of comparison between the Fitchburg and Worcester.

This system of averaging in the gross, cannot be too strongly condemned. It invariably tends toward fallacies if there is any attempt to found on it laws for particular cases. Each of the most important roads in Massachusetts has an experience that should long ere this have been made available for the elucidation of complete formulæ for its separate individual management.

How has it happened that such use has not been made of the data close at hand, that the roads have been suffered to go rapidly down hill, and no manager has discovered it?

We have no means of knowing unless we find it in the words and confessions of those gentlemen

themselves. Happily we are not left in the dark by reason of the lack of such testimony.

We have it in detail in the letter of Capt. Swift, than whom there can be no better authority. We are told plainly, but not squarely, that the same looseness characterised the administration of Railroad managers in times past, as now, their defence of that administration. We are told simply that Railroad Companies did not know what work they were doing, nor what it was costing. The Legislature had not demanded the return of their accounts for the benefit of stock and bond holders, and so long as dividends were paid—the detail of their work was a matter of no importance—and rather than drive the managers of Railroads to such hard duty as a truly energetic and economical administration of affairs would require, let matters slip quietly along. And they have done so till the ungentle is exhausted, and they refuse to slide so smoothly.

But let us hear what Capt. Swift says—

"It was not until the year 1846, that these returns were required in their present detailed form, hence the number of passengers, and the number of tons of freight carried one mile, cannot be stated prior to that year; but from 1846 forward, they can be stated."

"It is obvious that no proper comparison can be made of the work of one year with another year * * * * * without such data."

In 1846, then, the stockholders began to help the officers study Railroads—the result was what might have been expected, and just what followed—and what we see by the first page of the pamphlet in hand, was the cause of this recent demonstration on the part of the companies—"the present great depression of value in that species of property"—Railroad stock.

We have, then, two important facts elucidated, first—Railroad managers were careless in attention to their duties, and did not provide themselves with information necessary to an intelligent and economical working of the road, and a wise appreciation of future demands, until forced to such labor by the law of the State.

Second,—when armed with the necessary statistics, they neglected to use them until the stock depreciated in a frightful ratio, and stockholders becoming clamorous, gave them no peace.

We shall find, presently, that notwithstanding this clamor, and the present demonstrations, the statistics have been neither skilfully nor fairly used; that the same characteristic shiftlessness attends the manner in which they have been handled, as well as the performance of those popular comedies known as "Investigations," that they have constantly exhibited.

If any other indications than those already named were needed to demonstrate the truth of our point, that the *Reform Reports* exhibit "a general indefiniteness in the statement of facts," that "they are broad assertions unsupported by nicely ascertained truths," we have no difficulty in their discovery.

We may find it profitable to turn to the Report of the Providence Railroad Investigating Committee, January 9th, 1856. On the 10th page we read,— "The cost of carrying freight and carrying passengers is not separated on this, or any other road, so far as your Committee are informed, and therefore the relative deficiency in these two classes of business cannot be accurately ascertained; but your

Committee recommend that in all cases where the road is not restrained by contracts, the prices of freight be materially advanced."

"As regards the price of transient passenger tickets, considering that the cost of carrying passengers will probably increase in future years, we recommend that an advance of twenty per cent. be made."

On the same subject Capt. Swift says: (page 12.)

"At this time we do know what it costs to do the aggregate work of a railroad, but in consequence of the manner in which the greater number of companies keep their account of expenses, the exact cost of transporting one passenger one mile, or one ton of freight one mile, cannot be stated separately; to do this, rigidly, would require an account to be kept with each engine upon the road, her consumption of fuel, expenses, repairs, &c.

Hence the apportionment of the cost of these repairs and of those of the roadway to any one department cannot be correctly made, and the same is to be said of the miscellaneous or general expenses." This is another acknowledgement of incompetent management. Still more, it is acknowledging another important error, which is, that the recommendation of expedients to force these roads into a paying condition are not well or carefully considered. They betray the fact that it is sought to bring up the stock by the easiest method and not by the most correct, just, or efficacious. We have work of all sorts huddled together, with a clumsiness unworthy the men whose shrewdness in every matter, save railroad management, has made that great State to be a model to men of enterprise.

We read (page 23 Prov. Inv. Com. Rept.) of some important tables that give certain facts concerning the "cost of transporting one passenger or one ton of freight one mile."

Now it seems to be entirely lost sight of that such a table can be put to only the most mischievous uses. Is it sought to arrange prices by such a table? In what manner shall it be done?

Let it be borne in mind that it costs one price per mile to carry through express passengers; another for way transient, and another for commuters. That through or express freight is one thing and way freight another.

These points have all to be remembered when we attempt to regulate the tariff for a single road. Now one of the "tables" mentioned includes the items of this kind for six roads in the aggregate. Here then looking at the necessity of classification alone are thirty chances for error and injustice.

But if we attempt to regulate the tariff of all the roads included in the "table" to one common standard, we have another source of error and one of great magnitude. Observe in the table published in last week's JOURNAL the different physical characteristics of the Massachusetts railroads.

The rise and fall of the grade line of the Boston and Worcester railroad amounts to about 23 ft. per mile, while that of the Lowell is less than 4 ft. per mile.

The curvature of the former is 71° per mile, while that of the Lowell is but 28° per mile.

These are important considerations and if the Massachusetts railroads had been properly man-

aged, there have been time and experience enough in each to have precisely determined the cost to the company of every single ton and of every individual passenger. The nearest we get to any thing of this sort is a bald assertion by Capt. Swift unaccompanied by any of the details of his analysis, and therefore (if it is to receive just the value we would give to every scientific theory with the same degree of support,)—good for nothing. Says Capt. Swift (page 13): "My own experience, and certain information of a tolerably exact nature, which exists on this subject, has led me to the conclusion that in general with us, it does cost just about twice as much to move a ton one mile as it does to move a passenger the same distance. I shall so assume it here."

We have, perhaps, said sufficient to redeem our first promise which was "to point out some of the errors and fallacies that have crept into these Reports." But we must be pardoned if we dwell another moment on the same topic.

When we reflect that the companies have sought to increase their rates on the strength of these various Reform Reports, we are surprised that no greater accuracy has been sought than is implied in a random guess. For what else can be such statements as the following.—

Capt. Swift, page 14th, estimates the cost of carrying one passenger one mile at 1 1/4 cents.

The Providence R. R. Inv. Com. (page 5,) estimate the same duty to cost 1 1/4 cents.

Mr. Joel W. White, President of the Norwich and Worcester road, in a long letter to Mr. W. Farnham says, "three cents per mile for a speed of 20 miles per hour will prove remunerative for passengers on all the New England roads, but four cents per mile is wholly unremunerative, when running at 35 or 40 miles the hour."

Now whom shall we believe? They agree in the general statement, that it costs more per mile to carry a passenger than they are receiving, but they do not present one item of detail, in propounding this oracular decision. What proof is there then, that they are not sufficiently paid for their work? That there may be an abundance of it we do not dispute,—but we have not been permitted to see it. Nor do we find, the gentlemen responsible for the assertions any more familiar with the existence of such proof.

If we can learn nothing of the expense of carrying passengers in Massachusetts, perhaps we shall be permitted to go elsewhere for information, provided we take cases, between which and the roads in question a fair parallel can be drawn.

We think such may be found. It seems to us the line of road now constituting the New York Central will be as fair a criterion as can be demanded. These roads in times past have had competent management and, consequently, have been eminently successful. We may, by reference to the State Reports, gather some valuable information as to the cost of transporting one passenger a mile, before and after their consolidation.

Cost in cents of conveying one passenger one mile during each of five years.

NAME OF COMP'Y.	1850.	1851.	1852.	1853.	1854.
Albany & Schenectady.	1.009	1.11	0.97		
Utica & Schenectady.	.781	0.66	0.49		
Syracuse & Utica.	1.056	0.82	0.63		
Rochester & Syrac.	0.789	0.78	0.82		
Buffalo & Rochester.	0.779	0.50	0.49		
				0.58	0.65

The annual report of the New York Central

Railroad for 1854 being the first after the consolidation (page 8,) reports after so much experience, the rate of fare per mile charged to passengers in respective classes at one to two cents, while the rate of speed adopted by the ordinary passenger trains, when in motion, was 32 miles per hour and the rate of express trains 40 miles.

We do not believe that any of these gentlemen have intentionally misrepresented the item of cost of transportation, but they are mistaken, and their mistakes are of the sort that, viewing matters from the point of view at which they stand, would seldom be avoided. It was necessary to the support of their position that the public should be made to believe in the necessity for advancing fares. The discovery of such mistakes may not always be in the power of outsiders, "for"—to quote from the late Report of J. Dutton Steele to the Reading Railroad Company—"although the reports of the various railroad companies are accessible to all, they are not unfrequently misunderstood by those, who desire to make use of the statements, owing to some peculiarity in the system of accounts with which they are not familiar."

But we may leave the line of the New York Central Railroad for information of the same kind. It has been customary for some years in the Reading Railroad Reports to present in detail such estimates as the following made up from the work of a whole year. We shall find it in the last Report at page 41. "Statement K.—Items of cost, in detail, of running passenger trains on the Philadelphia and Reading Railroad, for the year ending November 30th, 1855."

Using wood fuel exclusively, per daily trip of 98 miles.

ITEMS OF COST.	NO.	SCRIP-	DE-	AVER-
		TION	AGE	AM'NT.
Wages of Engineer.....	1	Day	....	\$2.48
Do. Fireman.....	1	Day	....	1.35
Do. Conductor.....	1	Day	....	1.80
Do. Baggage Master.	1	Day	....	1.40
Do. Brakeman.....	1	Day	....	1.25
Wood for fuel, including				
bring up.....	3.2 Cords	4.60	14.72	
Water used.....	4 M.Gals.	6	.24	
Oil for engine and tender.	1.2 Gals.	1.60	1.92	
Oil and grease for cars.....		....	.40	
Repairs of engine.....	96 Miles	9.1	8.73	
Do. and refitting cars.		....	8.76	
Hands at depot, extra on-		....	4.90	
gines, &c.....		....	3.84	
Sundries for trains.....		....		\$51.79

—Equal to, at 61.3 through passenger per train
84.49 cents per passenger.

—Which amount of 84.49 cents is for a trip of 98 miles, so that the price per passenger per mile is, 0.908 cents.

It must be evident to every man that we cannot pretend to any elaborate analysis of those Reports within the limits of one article, and no apology can be needed for extending our consideration of a subject of more importance than all others to the great interests in whose service we are engaged—the correct management of railroads in this country.

We must, therefore, defer any further remarks till next week. From what we have already said, the fact is apparent that the managers of Massachusetts railroads felt called upon to defend a system that is bringing their companies to ruin. The Reform Reports amount to nothing but a

defence of past management. In the last year, before this subject was mooted, we predicted the state of things now existing. In an article published in the JOURNAL of November 17th, we wrote as follows:

"The unproductive roads, having a reasonable income, are badly managed. In one case, failure will be ascribed to unremunerative rates of charges. This admits incompetency, for the managing party should have known whether he was doing business at a profit or loss. In another case, elegant structures will be pointed to, which have cost too much for the business of the road. But this does not help the matter. A merchant would think it a poor excuse for failing, to say that he put all his capital into the building he occupies. His excuse would be a confession of incompetency. A man engaged in any kind of business is presumed to be master of his calling, and success is the only test of his competency.

Mobile and Ohio Railroad.

The Report of this company for the year ending December 31st, 1855, just published, states the whole number of miles of road in operation from Mobile, at the above date was 153,—showing a progress within the year of fifty-six and a-half miles. Of the track of this, thirty-three miles were laid after the 8th of June. On the 29th of January, the rails were down to the Gainesville Junction, 162½ miles north of Mobile, and about seventy miles from Columbus. If the track-laying be continued, it is estimated by the Chief Engin'r that the work will be finished to the Noxubee line by the 1st of June; to Macon about the first of July; and to Columbus about the close of August.

The earnings of the transportation department during the year 1855, it is stated, are very satisfactory, and, notwithstanding the loss of a month by floods and other accidents, they are in excess of the estimates formed last Spring. The whole number of passengers during the year was 32,607. And the average distance traveled by each passenger was forty-eight and a-half miles—equal to 1,573,533 carried one mile. Of these 24,404 were first class and 8,208 second class.

The gross earnings of the transportation department within the year were from passengers \$18,084.60, for freight \$149,350.74; from mails and express \$2,497.62. Total \$199,932.66. The total earnings for 1854 were \$59,367.45. These earnings are exclusive of charges of freight for the company—namely, iron, lumber, &c. If these were added, the total would be \$253,498.96 for 1855.

The total expenses of the transportation department during the year were \$90,696.72, which is equal to 45 per cent. of the earnings from the public traffic; or adding the company's freight, a little less than 85 per cent. For 1854, the ratio of expenses was forty-seven and nine-tenths per cent. of the gross earnings, thus showing that while these earnings have increased nearly three-fold upon an increased distance of ninety-eight per cent. of the road, the expenses have diminished in the ratio of from forty-seven and nine-tenths to thirty-five per cent. upon the income.

The total amount invested in the construction of the road from the beginning to the 31st of December, 1855, as far as has been reported at the Mobile office, is \$4,536,412.—This amount has been derived as follows—

From payments on capital stock, including city tax bonds of 1856 and 1857.....	\$2,568,555
From revenue of the road in operation, nett.....	164,936
From income bonds, state loan, and sundries, payable	1,802,921
	\$4,536,412

The following shows the amount of the outstanding debt of the company, December 31st,

1854, together with the payments made thereon in 1855; and also the new debt created up to December 31st, 1855.

Amount of indebtedness to December 31st, 1854,
as per last annual report..... \$1,937,666.15
Of which has been paid, in 1855... 467,008.58

Leaving unpaid Dec. 31, 1855... \$1,470,662.57
New liabilities created during the year, unpaid..... 602,263.45

Total debt Dec. 1, 1855..... \$2,072,981.02

Being an increase of indebtedness over the previous year, of..... 135,264.57
And, after deducting city taxes of 1855 and 1856, pledged for the redemption of the tax bonds of 1856-'57, leaving a balance of... \$1,644,931.02

Of this amount \$400,000 due to the State of Alabama, has been extended for two years by a recent act of the Legislature, and will be payable in March, 1858. The remainder, \$1,244,931.02, will mature in all the present year, the greater portion before first June next, and upon the next Board will devolve the duty of making provision for its further extension or liquidation.

This statement does not include the income bond issue payable July 1st, 1861, nor \$20,000 six per cent. mortgage bonds payable 1883, which have been disposed of, but embraces all other obligations of the company, excepting a purchase of rails now coming forward, and which will appear in the accounts of 1856.

This purchase is part of a contract made by the President in London in the Spring of 1855, for 20,000 tons rails to be delivered in 1856, of which 16,000 tons are payable in Tennessee bonds at par, and 4,000 tons in the company's obligations at twelve months with interest. A portion of this contract has been delivered, and will become payable early in 1857.

It track-laying is to be continued, after the present stock of iron out of bond is exhausted, it will require for duties and custom-house charges, the sum of \$75,000
Will also be required for freights, insurance, &c., on cargoes in port and to arrive 40,000
—which must be provided for during the next three months.

In the programme put forth by the company in March last, in reference to raising means by an issue of income bonds, the amount required to pay floating indebtedness and build the road to Columbus, was stated at \$1,090,000

It was proposed to obtain this sum from—
1st. An issue of income bonds..... \$1,000,000
2nd. The net earnings of road in operation to Macon (198 miles) estimated at..... 150,000

Making a total of..... \$1,150,000
And leaving a surplus of \$60,000 for contingencies. The amount actually realized from these sources to 1st of January, 1856, (to which are added instalments due after 1st of January, and amounts not yet collected) is as follows:

Income bonds—From instalments paid to 1st of January, 1866	\$397,025
" " From loans Mobile b'ks. 120,000	
" " " instalments due & collected, Jan'y, 1856	40,000
" " Uncollected city and country s'bscriptions estimated.....	42,975

Total from bonds..... \$600,000
From net earnings of road in operation to Marion (180½ miles)

..... 85,000

\$685,000

Leaving a deficiency of means of \$4,560,000
The President of the Company made temporary provision for supplying a part of this deficiency,

by procuring a loan in New York, on a deposit of income bonds of \$100,000

And by opening a credit with a banking house in New York for \$150,000, of which has thus far been drawn against the sum of 125,000
—Leaving a balance of \$180,000 still required to carry out the programme as originally stated.

* * * * *

The Report of the Chief Engineer furnishes in detail the progress of construction upon the several divisions of the line to 1st February, which may be summed up as follows:

	Miles.
Total length of road from Mobile to Columbus, Ky.	473
Of which laid and in use February 1st, '56.	153
" " not yet open, Feb'y 20, '56.	9½
" graded ready for track.	262½
" in progress not ready.	47½

From Columbus, Ky., to Cairo, 24½ miles not yet graded. Of Paducah Branch, 59 miles in length, 7 miles of track are laid, 20 miles more are ready for track, and 32 miles in progress of graduation.

Comparing these figures with the last Annual Report, the total amount of progress made for the year 1855, is:

56¾ miles of track laid and added to road in use.	
64 " more completed ready for track on the main line and Columbus, Mississippi and Kentucky branches; and on the Paducah Branch, four miles laid and four miles graded, ready for track during the year.	

Upwards of one million dollars of solvent local subscriptions are yet due and uncollected in the States of Mississippi and Tennessee, all of which will be required as rapidly as they can be made available, to defray the expenses of local work in those States—for which they will be fully adequate.

The want of a suitable freight depot is severely felt in the operations of the Transportation Department, not only by the inconvenience which is occasioned in the regular transaction of business, but from the fact that the company is paying considerable amounts for lost freight, which there is good reason to believe is stolen from the station in its present exposed condition. To erect a building for this purpose, a section of engine house, and furnish the machine shop at Whistler, will cost by the Engineer's estimate, \$30,000, and to improve the track below Citronelle, \$80,000. All of which should be expended in the present year, 1856.

Referring to the statement of indebtedness already given in this report, of which is matured and will be due this year \$1,244,931

Add expenditures for station house and track indispensable to safe operation of present length of road 110,000
And for freight, &c., on iron arriving at Mobile, payable in cash 40,000

Total \$1,394,931

We have in round numbers the sum of \$1,400,000, which will be needed, most of it within the next six months, to relieve the company from obligations already incurred, provided expenditures be at once stopped, and the work of construction in Mississippi entirely suspended.

Should track-laying be continued, however, \$150,000 additional will be needed to take rails out of bond and lay them in track to Columbus.

To meet this large indebtedness, the resources of the company are:

1st. The entire issue of first mortgage bonds \$6,000,000
Less to protect an issue of \$1,000,000 income 1,000,000

\$5,000,000

2d. Income bonds undisposed of 400,000
And 3d, the donated lands of the company, 1,500,000 acres.

The Chief Engineer's Report furnishes some

suggestions with regard to a disposition of these lands; but as differences of opinion exist concerning the proper course of policy on this subject, no settled conclusions have yet been adopted by the Board concerning them. It will, however, soon become a matter demanding careful consideration and action.

The net earnings of the Transportation Department are not included in the estimated resources, for the reason that unless the road shall be extended to Columbus, these earnings will not much more than pay the interest on State loan and other indebtedness. From the lands—while they constitute a valuable security and basis of credit—nothing can be realized in season to satisfy present engagements.

From the facts herein set forth, therefore, of the company's resources and liabilities, we arrive at one of three obvious and unavoidable conclusions:

1st. The mortgage bonds must be sold abroad; or, 2d, the stockholders must come forward and take them themselves, in sufficient amounts to pay off the liabilities; or, 3d, their interests must be sacrificed by the failure of the road to meet its obligations.

It is true it is believed by the President that further extension will be granted on the iron debt abroad, which makes up so large a proportion of the indebtedness, but this rests only upon verbal understanding, and no Company can afford to borrow money or extend debts for any length of time at exorbitant rates of interest.

The work has (with exception of the debt unpaid) so far been prosecuted upon local means, a very large proportion of which have been furnished by the city of Mobile, including nearly the whole amount realized from income bonds for continuing the work since last spring. From year to year since 1853 various efforts have been made to put the mortgage bonds in a train for a negotiation, but no propitious season has been found for offering them in the financial markets. The proposed change from sterling to dollar bonds payable in New York, may facilitate their sale in that city, but the disappointments heretofore, should prevent too much reliance from being placed upon aid from foreign sources, as a means of dependence from present indebtedness.

It would be indeed extraordinary, if a road offering such securities for its bonds as the Mobile and Ohio, could not command capital in their investment were it not that the value of money has been so much enhanced by its withdrawal from the ordinary channels for war purposes in Europe—that older works and better known in financial circles, suffer under like depression, in the cities which decide their marketable quotations. The intrinsic merits of the Company's bonds are not disputed; their abundant security is not questioned; the immense carrying power of the road when completed is foreshadowed by the rapid increase of its receipts as it progresses. Yet the bonds are not sold—all other available resources are exhausted, and the stockholders must come forward for the protection of their own interests, either by taking these bonds at a rate which will give them an equal income with other investments; or by purchasing an enlarged issue of income bonds, maturing at five to ten years, upon a more extended basis of earnings; or by adopting some other plan upon which the necessary means may be secured by home effort. The only remaining alternative is submission to all the sacrifices consequent upon discredit.

The ability of the city and country is fully equal to the absorption of two millions of these bonds, the proceeds of which with a prudent financial management would release the Company from the incubus now embarrassing all its efforts, and enable it to continue progress steadily to Oklahoma. From thence to Tennessee line, a gap of 73 miles only would remain unfilled. The Tennessee bonds for superstructure will be saved by an extension of time granted by the last legislature of that State, and as reported by the Chief Engineer, the advanced stage of the road-bed, will enable

the Company to comply with the terms and receive the bonds the coming summer, so that the 73 miles above mentioned, would be the only link wanting to complete the chain from Mobile to the Mississippi river at Columbus, Kentucky.

Report of the Auditor of the New York Canals for 1855.

The whole amount of tolls collected upon the several canals of this State, during the last season of navigation, was \$2,895,076.10, which amount is composed as follows:

Tolls on boats and passengers	\$191,657
Tolls on products of the forest	489,666
Tolls on products of animals	55,263
Tolls on vegetable food	1,094,128
Tolls on other agricultural products	3,438
Tolls on manufactures	133,935
Tolls on merchandise	600,105
Tolls on other articles	173,885

Total \$2,805,077

The whole amount of tonnage transported on the canals during the last season of navigation, ascending and descending, was in tons, 4,022,617, which was composed as follows:

Products of the forest	1,534,934
Products of animals	43,691
Vegetable food	993,175
Other agricultural products	5,478
Manufactures	281,873
Merchandise	374,402
Other articles	784,064

Total 4,022,617

The value of such tonnage is estimated as follows:

Products of the forest	\$10,545,615
Products of animals	9,677,099
Vegetable food	47,486,450
Other agricultural products	1,058,165
Manufactures	10,467,559
Merchandise	113,572,523
Other articles	11,582,136

Total \$204,390,147

The total movement of freight or number of tons carried one mile during the last season of navigation, was 619,170,651. The total movement of the several classes composing such total tonnage, are as follows:

Products of the forest	178,223,492
Products of animals	12,952,058
Vegetable food	221,550,135
Other agricultural products	741,000
Manufactures	36,822,226
Merchandise	95,073,750
Other articles	73,808,000

Total 619,170,651

The whole amount of tonnage arriving at tide-water by way of the Erie canal from the Western States or Canada, during the season of navigation, was 1,092,876 tons. The whole amount of tonnage arriving at tide-water, the produce of this State, during the same period, was 327,839 tons.

The whole number of barrels of flour arriving at tide-water through the canals, during the last season of navigation, was 1,290,156

The whole number of bushels of wheat arriving during the same period, was 5,426,266, which, turned into flour, calculating five bushels to the barrel, would make 1,085,253

Total in barrels 2,375,409

The whole number of bushels of corn arriving at tide-water during same period, was 9,343,785. The total number of new boats registered during the last year, is 471, with a total tonnage of 48,220 tons, making an average tonnage of 102.4 tons.

The number of lockages at Alexander's lock for the season, was 30,873, and the greatest number of lockages at any one lock, was 33,241, at lock No. 45, Frankfort.

Such is a brief summary of the trade and revenue of the canals, as exhibited in the accompanying tables, during the last season of navigation—It exhibits, as compared with the season of 1854, an increase in revenue of \$31,509 75 A decrease in tonnage of 143,245 tons.

Decrease in lockages at Alexander's lock, 5,108. In flour and wheat comprised in the returns of vegetable food, there has been an increase in tonnage the past year, as compared with 1854, of 138,433 tons, and an increase in tons of \$185,183. In corn and oats there has been a decrease during same period of 75,420 tons, and a decrease in tons of \$108,261. Under the head of products of the forest, there was a decrease in tonnage upon shingles, boards and scantling, as compared with 1854, of 198,725 tons, and a decreased tonnage upon timber, staves and wood, of 34,753 tons, and a decrease in pot and pearl ashes of 794 tons. Under the head of "other articles," there was an increase in the tonnage of mineral coal for same period of 15,113 tons, and a decrease of sundries of 18,364 tons.

STATEMENT of the quantity in bushels of Wheat and Flour shipped at Buffalo and Oswego by Canal, from 1835 to 1855, inclusive, the Flour being reckoned at five bushels to the barrel.

Year.	Buffalo.	Oswego.	Total.
1835	672,427	669,067	1,341,494
1836	999,980	585,559	1,585,539
1837	1,084,475	340,035	1,424,510
1838	2,321,217	440,200	2,761,417
1839	2,405,849	658,160	3,064,000
1840	4,081,265	665,389	4,746,604
1841	4,450,565	735,249	5,185,814
1842	4,500,265	643,157	5,143,422
1843	6,104,064	1,154,909	7,258,973
1844	6,042,004	1,895,494	7,937,498
1845	4,964,451	2,016,487	6,980,938
1846	10,069,734	2,790,036	12,859,770
1847	15,533,117	3,766,001	19,099,118
1848	10,182,790	3,874,430	14,057,270
1849	9,115,040	5,164,997	14,057,270
1850	8,226,847	5,575,742	13,802,589
1851	9,199,765	6,116,868	15,316,633
1852	9,554,851	7,315,424	16,870,275
1853	8,250,638	8,783,293	17,033,931
1854	4,252,307	1,861,265	7,113,572
1855	7,633,531	4,691,662	12,325,193

TONS OF MERCHANDISE going to other States by way of Buffalo from 1842 to 1854 inclusive.

States.	1842.	'43.	'44.	'45.	'46.
Penn.	539	768	725	1,040	1,260
Ohio	10,038	14,528	12,390	14,286	17,302
Michigan	4,915	8,252	9,389	10,141	9,950
Indiana	785	2,256	2,332	2,685	3,491
Illinois	2,490	3,476	4,320	4,220	5,789
Wisconsin	1,410	2,890	3,272	3,986	2,704
Kentucky	295	423	205	634	473
Missouri	14	65	14	345	302
Tennessee	6	35	13	92	55
Alabama	—	2	—	16	—
Iowa	4	28	7	1	28
Canada	29	25	100	217	133

Total.... 20,525 32,792 32,767 37,713 44,487

States.	1847	'48	'49	'50	'51
Penn.	2,685	3,051	4,989	5,323	3,823
Ohio	20,326	21,450	15,147	14,302	33,919
Michigan	13,461	13,136	10,002	12,246	22,021
Indiana	4,458	5,186	6,519	6,666	9,334
Illinois	7,935	9,127	9,557	41,899	14,373
Wisconsin	6,909	11,224	9,408	11,629	11,379
Kentucky	706	665	1,372	1,979	1,668
Missouri	276	355	4,234	5,254	1,228
Tennessee	—	14	695	1,706	873
Alabama	—	44	—	2	—
Iowa	26	—	4,119	6,157	1,015
Canada	357	76	1,924	2,243	240

Total.... 57,590 64,428 67,966 79,406 99,918

States.	1852	'53	'54	'55	Merchandise.
Penn.	4,615	6,099	2,396	1,578	Sugar..... 50,963 1
Ohio	28,969	23,407	22,799	22,051	Molasses..... 21,067 4
Michigan	20,893	15,262	18,113	21,308	Coffee..... 10,381
Indiana	25,164	21,194	20,960	6,772	Nails, spikes and horse shoes.. 11,474 2,755
Illinois	35,199	67,876	70,248	52,579	Iron and steel..... 23,944 937
Wisconsin	22,877	21,124	25,015	33,589	Flint, enamel, crockery & glass ware..... 7,661 200
Kentucky	1,516	1,777	1,722	1,045	All other merchandise..... 169,985 11,489
Missouri	2,561	2,056	2,809	1,187	Railroad iron..... 78,027 173
Tennessee	341	294	337	543	
Alabama	—	—	—	—	
Iowa	389	1,371	1,274	2,672	Total merchandise..... 374,402 15,559
Canada	1,418	2,742	1,877	1,701	Other articles.

Total.... 143,787 163,192 167,550 145,530

A COMPARATIVE STATEMENT of the total tons shipped on the Canals of this State, and the total tons arriving at tide-water in the year 1855.

Tons arriving at tide-water.	Tons ship'd.	1855.	1856.	The Nova Scotia Railway.
The Forest.				
Fur and peltry	344	22		
Product of Wood.				
Boards and scantling	821,505	674,239		
Shingles	15,433	3,918		
Timber	134,273	63,168		
Staves	106,107	99,892		
Wood	452,389	58,520		
Ashes, pot and pearl	4,884	8,046		
Total of the forest	1,534,934	877,805		
Agriculture.				
Product of animals.				
Pork	16,266	11,299		
Beef	9,955	9,141		
Bacon	4,350	4,765		
Cheese	5,614	4,753		
Butter	2,458	2,121		
Lard, tallow, and lard oil	3,280	4,729		
Wool	2,880	2,164		
Hides	3,338	226		
Total product of animals	48,691	39,198		
Vegetable Food.				
Flour	169,485	139,337		
Wheat	302,676	161,788		
Rye	21,233	18,971		
Corn	309,236	261,626		
Corn meal	1,226	288		
Barley	52,391	40,187		
Oats	78,706	72,592		
Bran and ship stuffs	34,478	22,019		
Peas and beans	1,865	2,721		
Potatoes	21,559	20,671		
Dried fruit	320	161		
Total vegetable food	998,175	741,326		
All other Agricultural Products.				
Cotton	2,869	48		
Unmanufactured tobacco	1,237	1,172		
Hemp	248	221		
Clover and grass seed	391	410		
Flax seed	417	99		
Hops	316	130		
Total all other ag'l prod.	5,478	2,080		
Total ag'l products	1,047,354	782,504		
Manufactures.				
Domestic spirits	6,710	5,909		
Oil meal and cake	5,089	5,572		
Leather	4,355	3,443		
Furniture	3,408	638		
Bar and pig lead	1,329	1,398		
Pig iron	46,904	15,560		
Bloom and bar iron	8,887	7,491		
Castings and iron-ware	21,311	1,048		
Domestic woollens	147	186		
Domestic cottons	718	553		
Domestic salt	179,732	3,017		
Foreign salt	3,288	29		
Total manufactures	281,873	44,844		

Sugar	50,963	1
Molasses	21,067	4
Coffee	10,381	
Nails, spikes and horse shoes	11,474	2,755
Iron and steel	23,944	937
Flint, enamel, crockery & glass ware	7,661	200
All other merchandise	169,985	11,489
Railroad iron	78,027	173
Total merchandise	374,402	15,559
Other articles.		
Live cattle, hogs and sheep	138	63
Stone, lime and clay	297,129	78,419
Gypsum	52,934	3,439
Mineral coal	290,775	18,033
Copper ore	155	116
Sundries	141,933	74,711
Total other articles	784,064	174,781
Total	4,022,617	1,895,593

Passengers	£1,659	13	2
Freight	94	18	1
Do. of iron	38	9	1
Contractors for use of locomotive	105	0	7
	1,898	1	2
Running expenses	£845	12	11
Paid for repairs occasioned by accident	15	01	0
	996	2	11
Net revenue paid Receiver General	\$901	18	3

South-Western Railroad.			
At a meeting of the Board of Directors on the 14th ult., the President submitted a statement of the business of the company for six months, ending 1st inst.			
The earnings of the road for the six months am'ted to \$195,508			
Showing an increase of \$65,370 over the corresponding months of the previous year.			
The current expenses, including amount expended for new cars, were \$84,789			
Leaving as net profit \$110,719			
The Board declared a semi-annual dividend of 4 per cent., amounting to \$33,884			
And paid for interest \$16,442			
\$60,326			
The balance of earnings is appropriated to pay for 500 tons rails, now being received, and for additional motive power.			
At the annual election held on the same day, the following gentlemen were elected officers of the company, viz:			
President—R. R. Cuyler.			
Directors—J. W. Anderson, W. A. Black, W. S. Holt, T. M. Furlow, Robt. A. Smith.			

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Length of Road.	Capital paid in.	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.	NAME OF COMPANY.	Length of Road.	Capital paid in.	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.		
Atlantic & St. Lawrence	149	1,538,100	2,973,700	6,019,929	470,647	6	68	South Western, Ga.	92	1,097,496	465,500	1,624,920	253,306	141,168	8		
Androscoggin & Kennebec	56	642,343	1,473,080	2,245,020	190,605	90,797	none	Tennessee and Alabama	30	246,486	-----	679,906	In progr.	-----	-----		
Androscoggin	20	91,192	232,193	343,317	28,396	12,807	none	Tennessee and Miss.	-----	170,931	-----	175,340	In progr.	-----	-----		
Kennebec & Portland	56	1,114,725	1,661,236	2,470,600	-----	-----	none	Memphis and Charles'tn	288	2,103,177	958,275	3,563,362	176,484	102,016	-----		
Portl., Sac., & Portland	51	1,367,000	119,237	1,486,327	259,330	124,038	6	88	Mobile and Ohio	527	2,300,000	1,310,866	3,666,991	In progr.	-----	-----	
Boston, Concord & Montreal	93	1,808,093	1,059,512	2,771,310	233,234	120,834	-----	Miss. Central	188	64,534	none	628,303	In progr.	-----	-----		
Boston, Concord & Montreal	53	2,085,925	899,313	3,179,687	380,221	143,565	2	-----	N.O., Opelousas & G. W.	350	1,309,428	476,143	1,825,812	In progr.	-----	-----	
Cheshire	82	1,485,000	none	1,412,576	329,744	158,632	8	54%	Vicksb., Shrevep. & Tex.	-----	111,750	-----	107,895	In progr.	-----	-----	
Concord	35	82,768,400	none	8,016,633	370,529	135,299	2 1/2	424	East Tennessee and Ga.	111	1,000,000	1,500,000	2,500,000	In progr.	-----	-----	
Concord	61	1,048,145	787,608	1,780,062	162,617	55,173	none	East Tennessee and Va.	16	625,425	788,593	1,033,781	In progr.	-----	-----		
Rutland & Burlington	120	2,233,876	2,662,396	3,578,428	394,971	-----	none	Nash. and Chattanooga	161	2,319,330	1,497,081	3,843,694	316,090	112,177	none		
Vermont Central	17	5,010,000	3,550,236	4,643,366	820,119	214,793	none	Covington & Lexington	93	-----	-----	264,973	-----	-----	18		
Boston and Lowell	27	1,830,000	326,635	2,188,595	489,764	140,377	6	70	Lexington and Frankfort	29	431,091	159,299	635,363	90,930	34,864	-----	
Boston and Maine	83	4,076,974	156,000	4,179,535	854,420	330,060	6	91	Lexington & Big Sandy	-----	-----	428,057	In progr.	-----	-----		
Boston and N.Y. Central	74	2,240,300	1,518,671	2,463,463	59,917	8,740	none	Lexington and Danville	-----	540,117	61,625	570,463	In progr.	-----	-----		
Boston and Providence	65	3,160,000	369,182	3,677,164	558,671	210,680	none	Louisville and Frankfort	65	698,236	669,061	1,589,566	244,014	96,902	6		
Boston and Worcester	68	4,500,000	655,428	4,865,49	1,008,004	404,461	6 1/2	59 1/2	Atlantic & Gt. Western	254	866,939	77,294	613,231	In progr.	-----	-----	
Cape Cod	47	611,690	230,598	997,252	119,221	56,527	3	29%	Bellefontaine and Ind.	118	1,881,508	1,260,612	2,805,821	238,010	114,592	none	
Connecticut River	62	1,591,110	273,241	1,802,244	286,563	103,787	5 1/2	47	Cleveland and Erie	95	-----	-----	-----	-----	-----	-----	
Eastern, Mass.	60	2,583,400	2,947,737	4,621,016	647,281	305,998	-----	Clev., Col., and Cincin.	141	4,473,721	374,127	4,546,133	1,162,601	557,905	9	101 1/2	
Fitchburg	67	3,540,000	158,700	16,000	654,603	191,887	55,877	8	Clev., Zanesv., and Cincin.	87	-----	-----	-----	-----	-----	-----	
Nashua and Lowell	14	60,000	-----	-----	311,953	198,491	56,533	6 1/2	Cleveland and Toledo	200	2,675,425	2,689,301	5,124,629	736,272	396,986	10	78 1/2
N. Bedford and Taunton	21	500,000	none	533,953	295,738	6	-----	Clev. and Mahoning	108	-----	-----	628,533	In progr.	-----	-----		
Old Col'y and Fall River	87	3,015,100	229,650	3,862,949	653,499	295,738	6	82 1/2	Clev. and Pittsburg	133	2,686,770	2,516,162	4,818,153	450,215	255,808	64 1/2	
Vermont and Mass.	77	2,232,541	1,038,670	2,809,727	208,726	87,813	none	Cin., Hamil'tn & Dayton	60	2,100,000	1,446,364	2,961,978	483,620	60	-----	-----	
Western, Mass.	165	5,150,000	5,966,420	10,495,908	1,669,673	633,013	7	92	Cin., Wilm. & Zanesv'e	131	1,120,450	1,181,265	2,326,456	In progr.	-----	29	
Worcester and Nashua	46	1,141,000	205,565	1,51,271	294,780	55,760	2	44	Columbus and Xenia	63	1,484,560	149,000	1,481,733	366,364	187,518	10	85 1/2
Province and Worcester	43	1,510,020	328,461	1,806,869	311,430	138,057	-----	Dayton, Xen., & Belpre	63	437,888	422,658	860,496	In progr.	-----	-----		
Hartford and N. Haven	72	2,356,000	939,000	3,313,932	730,012	852,799	10	122 1/2	Dayton and Michigan	140	1,076,602	393,011	1,185,826	In progr.	-----	-----	
Hartf. Prov. and Fishkill	120	1,845,610	2,090,124	4,060,869	258,685	119,911	-----	Eaton and Hamilton	42	448,411	835,994	1,345,573	113,859	53,256	27		
Housatonic	110	2,000,000	474,177	2,429,066	330,702	18,351	none	Little Miami	65	2,963,921	1,717,175	3,648,172	681,562	336,708	85		
Naugatuck	57	1,031,800	578,995	1,577,167	288,266	none	Mad River and L. Erie	205	2,451,650	2,572,932	4,446,681	-----	-----	-----	-----		
N. York and N. Haven	62	2,992,450	2,264,656	4,906,784	986,025	341,667	none	Central and Ohio	138	1,520,927	3,485,076	4,288,443	Recently opened.	none	-----	-----	
N. Haven and N. London	60	73,258	735,165	1,450,318	103,986	217	none	Pittsb', Mayev'e & Cin.	187	2,451,700	3,219,000	5,670,700	1,111,626	682,117	9	66	
N. London, W. & Palmer	66	609,200	1,073,673	1,654,383	124,044	66,331	none	Sandy', Maus', & Newk.	50	-----	-----	343,882	In progr.	-----	-----		
Norwich and Worcester	66	2,122,300	873,488	2,597,173	304,236	88,458	2 1/2	36	Scioto & Hocking Valley	135	403,975	2,206,357	3,552,357	328,958	164,479	none	-----
Albany Northern	32	439,005	1,255,008	1,840,696	117,716	9,904	-----	Springf. Mt. Vernon & P.	113	1,000,000	1,256,000	950,000	-----	-----	-----	-----	
Black River and Ulca	35	643,330	317,859	974,323	1,029	-----	Ind. and Cincinnati	242	2,500,000	4,520,000	4,520,000	In progr.	-----	-----	7		
Buffalo, Corn. and N. Y.	100	1,457,874	1,001,183	2,819,096	172,476	66,333	none	Tol. Wahash and St. Louis	255	4,196,679	1,006,125	2,080,433	In progr.	-----	-----		
Buffalo and N. Y. City	92	798,439	2,557,849	3,401,868	288,392	31,896	none	Cin., Log., and Chicago	109	706,945	1,177,568	1,844,541	127,400	64,552	-----	-----	
Buffalo and St. L'ne	69	1,800,000	1,040,000	2,494,364	679,750	355,763	10	-----	Evansv'e & Crawford's.	88	1,213,723	1,442,859	2,178,461	356,012	183,142	7	57
Canandaigua and Elmira	47	434,111	922,393	1,275,796	174,089	69,506	-----	Indiana Central	66	611,400	1,261,179	1,907,911	350,176	184,375	48	-----	
Canandaigua & Niagara P's	98	816,000	2,279,854	3,495,832	182,000	-----	Chicago and Rock Is'd.	83	884,157	1,101,971	1,671,544	-----	none	20	-----		
Guyuga & Susquehanna	55	687,000	606,089	1,187,562	135,433	48,649	none	Jeffersonville	66	1,014,252	694,000	206,544	94,318	-----	-----		
Hudson River	144	8,758,466	9,250,362	12,738,797	812,087	603,946	none	Lafayette and Indianapolis	64	-----	-----	-----	-----	-----	-----		
Long Island	95	1,875,148	604,945	555,986	301,793	116,462	31	-----	Madison and Indianapolis	87	1,647,500	1,589,881	3,237,381	-----	-----	-----	
New York Central	534	24,154,864	14,462,742	25,523,913	1,563,581	1,312,128	8	91 1/2	New Albany and Salem	288	2,535,121	5,281,498	6,643,189	371,420	none	10	
New York and Erie	464	10,023,958	25,126,636	33,439,431	484,988	2,627,118	none	Peru and Indianapolis	73	-----	558,314	-----	150,000	none	15		
New York and Harlem	165	6,717,100	4,069,769	8,758,203	1,635,577	234,126	none	Terre Haute and Ind.	73	974,800	604,355	1,502,166	287,512	189,702	10	95	
Northern, N. Y.	118	1,633,022	4,406,874	5,470,714	520,153	135,754	none	Chicago and Rock Is'd.	182	1,341,500	5,214,155	1,256,000	1,077,312	1,077,312	17	94 1/2	
Oswego and Syracuse	85	389,000	216,681	223,683	126,640	56,982	3 1/2	Camden and Atlantic	178	2,300,000	1,325,000	3,625,000	1,077,312	1,077,312	17	91 1/2	
Pottawatomie and Watertown	29	467,200	224,189	749,683	184,329	44,826	-----	Galema and Chicago	298	4,334,800	1,189,304	5,866,263	1,506,710	942,281	17	112 1/2	
Rensselaer & Saratoga	25	610,000	140,000	866,423	241,149	82,600	7	-----	Illinois Central	707	1,419,440	18,001,426	16,698,099	1,532,118	97 1/2	-----	-----
Saratoga and Whitehall	48	500,000	385,600	71,909	21,089	none	Peoria and Oquawka	93	568,899	818,454	1,388,342	In progr.	-----	-----	-----		
Syracuse & Bingham'tn	80	1,678,804	2,272,777	159,484	22,503	-----	Ohio & Miss. (Wat. Div.)	147	1,780,295	3,292,400	4,870,586	Recently opened.	-----	-----	-----		
Troy and Boston	27	437,830	737,079	1,109,822	156,363	55,184	-----	Terre Haute and Alton	178	2,281,420	1,256,000	3,537,424	In progr.	-----	-----	-----	
Watertown and Rome	97	1,870,378	700,979	2,068,063	404,374	172,474	3 1/2	Detroit and Milwaukee	155	838,000	1,128,964	1,964,964	600	-----	-----	-----	
Belvidere and Delaware	60	1,000,000	1,177,376	2,177,376	124,304	44,826	-----	Mich. Central	475	6,021,916	6,142,023	10,300,147	2,215,283	879,656	92 1/2	-----	
Camden and Amboy	94	1,															

Railroad Bonds.

The following quotations are ex-interest.

NAMES OF COMPANIES.	Amount of Loan.	Description of Bonds.	Rate Int.	Interest payable.	Where payable.	Due.	Offered.	Asked.
Alabama and Tennessee River	\$338,000	1st mortgage, convertible	7	1st Jan. 1st July	N.Y.	1872	-----	85
Buffalo and State Line	500,000	Do. convertible	7	April, October	"	1866	-----	95
Bellevfontaine and Indiana	600,000	Do. convertible	7	Jan'y, July	"	1868	-----	95
Do. do.	200,000	Real estate, convertible	7	Jan'y, July	"	1858	90	92%
Do. do.	200,000	Income, guar. Cl. Col. & Cin.	7	Feby, August	"	1859	87%	90
Central Ohio	1,250,000	1st mort. conv. east. sec.	7	Divers	"	1861-64	-----	77
Do.	800,000	2d do. convertible	7	March, Sept.	"	1865	-----	75
Cincinnati, Hamilton, and Dayton	500,000	1st mortgage, convertible	7	20 Jan. 20. July	"	1867	-----	93
Do. do. do.	465,000	Do. do.	7	May, Novemb.	"	1880	80	83
Cincinnati and Marietta	2,500,000	1st mortgage, conv. till 1862	7	Jan'y, July	"	1868	75	80
Cincinnati, Wilmington, and Zanesville	1,300,000	Do. convertible	7	May, Novemb.	"	1862	-----	90
Cleveland, Painesville, and Ashtabula	567,000	Do. convertible	7	Feby, August	"	1861	90	95
Cleveland and Pittsburgh	800,000	Do. convertible	7	Feby, August	"	1860	-----	93
Cleveland and Toledo	1,200,000	Do. on Branches	7	March, Sept.	"	1873	75	80
Chicago and Mississippi	525,000	Do. convertible	7	Feby, August	"	1863	86%	89
Do. do.	800,000	Do. conv. till 1857	7	April, October	"	1862-72	-----	86
Covington and Lexington	1,200,000	Do. convertible	7	April, October	"	1862-72	-----	86
Do. do.	400,000	Do. do	7	April, October	"	1862	73	76
Delaware, Lackawanna, and Western	1,500,000	2d mortgage, convertible	7	March, Sept.	"	1883	-----	66
Fort Wayne and Chicago	1,250,000	Do. conv. till 1863	7	April, October	"	1875	-----	91
Galena and Chicago	2,000,000	Do. convertible	7	Jan'y, July	"	1873	79	82%
Great Western (Illinois)	1,000,000	1st mortgage, do.	10	April, October	"	1868	86	90
Green Bay, Milwaukee, and Chicago	400,000	Do. convertible	8	10. April, 10. Oct.	"	1863	93	94
Jeffersonville	300,000	Do. 2d sec. inconv.	7	April, October	"	1873	-----	75
Indiana Central	600,000	Do. convertible	7	May, Novemb.	"	1866	-----	90
Indianapolis and Bellefontaine	450,000	Do. do	7	Jan'y, July	"	1860-61	-----	92
Indianap. & Cin'ti (for Lawb. & U. M.)	500,000	Do. conv. till 1857	7	March, Sept.	"	1866	-----	92
La Crosse and Milwaukee	950,000	1st mort. 1st sec. conv. till 1864	8	May, Novemb.	"	1874	75	85
Lake Erie, Wabash, and St. Louis	3,400,000	1st mortgage, conv. till 1859	7	Feby, August	"	1865	76%	78
Little Miami	1,500,000	Do. inconvert.	6	2. May, 2. Nov.	"	1853	79	80
Michigan Central	1,000,000	No mortgage, convertible	8	April, October	Bost.	1860	99	100%
Do.	600,000	Do. do	8	March, Sept.	"	1869	100	101
Milwaukee and Mississippi	600,000	1st mort. 1st sec. conv. till 1857	8	Jan'y, July	N.Y.	1862	96	97
Do. do.	650,000	Do. 2d do	8	April, October	"	1863	94%	95
Do. do.	1,250,000	Do. 3d do	8	June, Decemb.	"	1877	90%	91%
New Albany and Salem	500,000	Do. 1st section	10	April, October	"	1858-62	-----	95
Do. do.	2,325,000	Do. oth. sec. con. till 1858	8	May, Novemb.	"	1864-75	-----	80
Northern Cross	1,200,000	1st mortgage, convertible	7	Jan'y, July	"	1873	92%	95
Ohio and Indiana	1,000,000	Do. do	7	Feby, August	"	1867	90	90
Ohio and Pennsylvania	1,750,000	Do. do	7	Jan'y, July	"	1865-66	93	97%
Pennsylvania (Central)	2,000,000	Income, convertible	7	April, October	"	1872	80	82%
Scioto and Hocking Valley	5,000,000	1st mortgage, conv. till 1860	7	Jan'y, July	"	1870	95	96
Steubenville and Indiana	300,000	Do. 1st sec. conv.	7	May, Novemb.	N.Y.	1861	83%	83
Terre Haute and Indianapolis	1,500,000	Do. convertible	7	Jan'y, July	"	1865	-----	78
Terre Haute and Alton	1,000,000	Do. do	7	March, Sept.	"	1866	-----	78
Do. do.	2,000,000	2d do. do	7	Feby, August	"	1862-772	79	80
			8	Feby, August	"	1870	75	79

The following quotations include the accrued interest.

NAMES OF COMPANIES.	Amount of Loan.	Description of Bonds.	Rate Int.	Interest payable.	Where payable.	Due.	Offered.	Asked.
Baltimore and Ohio	2,500,000	Mortgage	6	April, October	Balt.	1885	84	85
Do. do.	1,128,500	Do.	6	Jan'y, July	Balt.	1875	87	88
Chicago and Rock Island	2,000,000	1st mortgage, conv. till 1859	7	10 Jan. 10. July	N.Y.	1870	93	93%
Erie Railroad	3,000,000	1st mortgage	7	May, Novemb.	"	1867	107%	107%
Do.	4,000,000	2d mortgage, convertible	7	March, Sept.	"	1859	95	97
Do.	6,000,000	3d mortgage	7	March, Sept.	"	1883	93	94
Do.	4,000,000	Not conv. Sink Fund, \$420,000	7	Feb'y, August	"	1875	90%	90%
Do.	4,351,000	Convertible, Inscription	7	Feb'y, August	"	1871	85%	84
Hudson River	3,500,000	Convertible	7	Jan'y, July	"	1862	86	89
Do.	4,000,000	1st mortgage, Inscription	7	Feby, August	"	1869-70	99	99%
Do.	2,000,000	2d do. do	7	16 June, 16. Dec	"	1860	87	89
Do.	3,000,000	3d do. convertible	7	May, Novemb.	"	1870	68%	68%
Illinois Central	17,000,000	Mortgage, inconvertible	7	April, October	"	1875	88%	88%
Do. (Free Land)	3,000,000	Mo ge 345,000 acrs-priv 7 shar's	7	March, Sept.	"	1860	90	90%
Michigan Southern	1,000,000	1st mortgage, inconvertible	7	May, Novemb.	"	1860	92	95
New York and Harlem	1,800,000	Do. do	7	May, Novemb.	"	1861-72	85	88
New York and New Haven	750,000	No mortgage, do	7	June, Decemb.	"	1855-60	-----	-----
New Haven and Hartford	1,000,000	1st mortgage, do	6	Jan'y, July	"	1873	-----	97%
Northern Indiana	1,000,000	Do. do	7	Feby, August	"	1861	91	92
Do. Goshen Branch	1,500,000	Do. do	7	Feby, August	"	1868	84%	85
New York Central	8,287,000	No mortgage, do	6	May, Novemb.	"	1864	101%	102
Panama, 1st issue	3,000,000	No m'ge conv. from June 57-59	7	15 June, 15. Dec	"	1866	103%	105
Do. 2d do.	1,478,000	Do. till 1858	7	Jan'y, July	"	1866	103%	105
Reading, issued 1843	1,573,000	Mortgage, inconvertible	6	Jan'y, July	Phila.	1860	-----	-----
Do. do. 1844, '48, '49	1,300,000	Do. convertible	6	Jan'y, July	"	1860	93	94
Do. do. 1849	3,469,000	Do. inconvertible	6	April, October	"	1870	87	88

CITY SECURITIES.	Int'st payable.	Off'd p. ct	Askd p. ct	CITY SECURITIES.	Int'st payable.	Off'd p. ct	Askd p. ct
New York. 7 per ct.	1857	{ Feb'y, May, 100	-----	Milwaukee, 7 per ct. comp.	X Divers	87	90
Do. 5 do.	1858-60	{ August and 97	88	New Orleans, 6 per ct. cp. R.R. X	Do.	75	78
Do. 5 do.	1870-75	{ November 97	98	Philadelphia, 6 per ct. 1876-98	Jan'y, July	92%	13
Albany, 6 per ct. coup.	1871-81 X	Feby, August, 97	98	Pittsburgh, 6 per ct. coup.	X Divers	77	78
Alleghany, 6 per ct. coup.	1871-81 X	Jan'y, July	97	Quincy, 8 per ct. coup.	1868 X Jan'y, July	-----	94
Baltimore, 6 per ct. coup.	1879-90	Quarterly	97%	Racine, 7 per ct. coup.	1873 X 10. Feby, Aug.	83	85
Boston, 5 per ct. coup.	1871-81 X	April October	99	St. Louis, 6 p. r. t. coup. Long X	Divers	79%	80
Brooklyn, 6 per ct. coup.	Long X	Jan'y, July	101	Do. Municipal X Do.	79	80%	80%
Clev'Pd, 7 per ct. ep. W.W. 1879 X	Do.	100%	102	Sacramento, 10 p. c. ep. 1862-74 X	Do.	80%	82%
Cincinnati, 6 per ct. coup.	Do.	89	90	S.Frisco, 7 p. e. ep. 1865, pay. N.Y. X	May, Novemb.	80	82%
Chicago, 6 per ct. coup.	1873-77 X	Do.	89	Do. 10 p. c. ep.	1871 X Do.	97	98
Detroit, 7 per ct. ep. WW. 1873-78 X	Feby, August	101%	102	Do. 10 p. do. pay. N. Y. X	Jan'y, July	104	104
Louisville, 6 per ct. ep.	1880-83 X	Divers	78%	Wheeler, 6 per ct. coup.	X Divers	67%	67%
Memphis, 6 per ct. coup.	1882 X	Jan'y, July	66	Zanesville, 7 do.	X April, October	97%	97%

Cincinnati Stock Sales,

By KIRK & CHEEVER.

For the week ending March 4th, 1856.

BONDS.

Per ct.

Little Miami, 6 per ct. Mort.	79
Covington & Lexington, 2d Mort. 7 per ct.	65
Ohio & Mississippi, 2d Mort. 7 per ct.	43
Marietta & Cincinnati, 7 per cent. 1st Mort.	70
Indiana, 2d Mort. 7 per cent.	78
Hillsboro' and Cin., 7 per ct. 1st Mort.	50
Cin., Ham, and Dayton, 2d Mort. 7 per ct.	59
Cin., Wil. & Zanes. 2d Mort. 7 per ct.	60
Covington & Lexington, 10 per ct. Income	60

STOCKS.

Cin., Wilm. and Zanesv., 18½.—Cin., Ham. and Dayton, 65.—Col. & Xenia, 83—Cincinnati, & Chic., 8½.—Central Ohio, 16.—Covington and Lexington, 18.—Fort Wayne and Southern, none.
Indiana Central, 47.—Indianapolis and Cincinnati, 58.—Little Miami, 91.—Mad River and Lake Erie, 18.—Marietta and Cin., 17½.—Ohio and Mississippi, 7.—Hillsboro' and Cincinnati, 17½.—Junction (Indiana), 10.—Peru and Indianapolis, 16.

Marie & Kanz' Money Circular for the European Steamer of the 32d Inst.

[TRANSLATED EXTRACT.]

New York, March 12th, 1855.

Since our advices of 4th ult., the stock market has been very inactive, and notwithstanding a few slight fluctuations, has been well sustained, railroad shares excepted. The effect of the great ease in the money market is neutralized by the revival of specie shipments, as well as by the state of our relations with Great Britain, and the anxiety to learn the issue of the European Conferences at Paris. The advices from Liverpool to the 23d ult., received yesterday, announcing the opening of the Congress, and the general confidence that peace would be the result, have not checked the downward tendency of speculative stocks. State stocks slightly up, Virginia alone active; Indiana ½ per cent. higher; Illinois Internal Improvement, 2; Missouri, ½; Tennessee, ½; Virginia, ¼. City and county bonds firm, little doing. We note a few sales in Cincinnati, Philadelphia, Pittsburgh, Racine, San Francisco 10 per cent. and St. Louis City. We quote also the first small sale in this market of San Francisco 6 per cent. bonds, (new) at the low price reported in our last. Railroad bonds inactive, without much change, but rather weak. Freedland bonds have been active, with 2½ per cent. advance, (sales at 85½ ex privilege); Illinois Central Construction bonds also brisk at ½ advance; Erie 1875, up 3½; Erie 1871, down ½; Harlem 1st mortgage, 1; and New York Central, 6 per cent., ½ per cent. lower. Bonds not dealt in at the Stock Exchange. With the exception of \$300,000 Racine and Mississippi 1st mortgage 8 per cent. bonds, negotiated this week, sales have been small, being confined principally to Milwaukee and Mississippi 1st and 3d sections, and Galena and Chicago 1st and 2d mortgages. Railroad shares inactive, generally lower. Cleveland and Pittsburgh 1 per cent. down; Harlem, 1½; Hudson River, 1; Michigan Central, 1½; Michigan Southern, ½; New York Central, ¾; Panama, ½; Reading, 2½ per cent. Erie has fluctuated between 58½ and 57½, the closing price. Money continues plenty. Loans on call 6a7. First class paper, 7. Names less current, 8a9. Exchanges are higher, with limited sales, except in Sterling, which has been taken in considerable amounts at 109½ to 109¾; Paris, 5.174.

MARIE & KANZ.

Since the sailing of the last packet, Messrs. Marie & Kanz have closed up the subscription to the First Mortgage Loan of the Racine and Mississippi Railway 8 per cent., convertible, \$10,000 a mile on 68 miles of the road opened and nearly approaching completion. The entire line from Racine, Wisconsin, on Lake Michigan to the Mississippi River at Savannah, is 136 miles, estimated to cost \$3,175,342. The capital subscriptions on the line amount to \$2,876,000, and the present loan being added, \$680,000, will afford about \$375,000 for contingencies upon this estimate. Since the late report of the Company, the new subscriptions to the work on the west end of the line have so far gone ahead of the previous calculations upon them, that the Directors are encouraged to believe that the present mortgage will be the only one required to consummate their undertaking.

They have now 47 miles in operation between Racine and Beloit; expect to open to Freeport, where connection is made with the Illinois Central by the 1st July, and to reach the Mississippi early in the Spring of 1857.

Extract from the Circular of Robt. Benson & Co., per Africa.

LONDON, Feb. 22d, 1856.

During the week nothing new has occurred either in connection with the negotiations for Peace, or to throw more light on the point in dispute between the governments of this country and America.

We mentioned in our last circular, that the particulars of a new Loan, and of the terms on which government proposed to fund a portion of the outstanding Exchequer Bills, were to be announced on the 18th, and we stated that it was supposed that the extent of the Loan would be £15,000,000. The amount, however, actually to be taken at present is much smaller, being only £5,000,000, and the operation is to be accompanied by the funding of £3,000,000 of Exchequer Bills. No sooner was this known than Consols which had fluctuated during the morning from 90½ to 90½, rose to 91 a 91½—the inference derived from the smallness of the Loan being that the most solid expectation of peace is entertained, and that Government have only sought to supply their immediate wants, assured that after peace is secured they will be able to obtain what they require farther, on better terms. The operation is not much liked by capitalists; and prior to the rate at which the Loan is taken becoming known, the market for Consols was flat, although it improved under steady and large purchases, which do not seem to be speculative, so that it closed last night at 91 a 91½ for money, and 91½ for the March account.

The bidding for the Loan took place this morning, when Messrs. Rothschild tendered for the whole at 89½. This bid was not accepted, the Chancellor of the Exchequer stating that the lowest price which Government was prepared to take was 90. After consultation the offer was thus amended, and the Loan awarded to Messrs. Rothschild and their subscribers. It was first quoted 1½ premium, and is now 1½ a 1½. The premium on the Funding operation is 1½. Consols opened 91 for money, 91½ a 91½ for the account, and are now 90½ a 91½ for money, and 91½ a 91½ for account.

In American Securities a limited business has been done. U. S. Stock is quoted 104 a 106, and Coupon Bonds 105 a 106. Maryland Sterling 87 a 90. Pennsylvania Stock has been sold at 72½ but is now quoted at 73 a 75; and the 5 per cent. bonds 80 a 82. Virginia 6 per cent. have changed hands at 87; and Tennessee 6 per cent. at 85. In Railroad stocks and bonds, we may quote Illinois Central 7 per cent. Construction Bonds firm at 79 a 80. Freeland 84 a 85. Shares 3 and 2 discount. New York Central 6 per cent. 82. Erie Sinking Fund Bonds 82. Pennsylvania Railroad, 1st mortgage, 87 a 88, and 2d mortgage, Sterling, 90 a 92.

Cotton has not maintained the advance named last week. The sales are smaller and prices rather in favor of the buyer. Sales for the week reported to be 51,000 bales. In the Corn market there has been a small advance. To-day the market is firm but little doing. For Railroad iron higher prices are asked.

ROBT. BENSON & CO.

Pennsylvania Coal Trade.

The Pittsburgh *Gazette* estimates the total shipments of bituminous coal from the mines in Western Pennsylvania during the last year, both east and west, at 1,423,698 tons. Estimated according to its value at the point of exportation, the coal sent to market, as above stated, was worth \$1,904,135; but when estimated by the probable amount obtained for it, its value may be set at \$3,270,852. The coal trade of Western Pennsylvania is steadily increasing. The increased shipments by river amount to 3,000,000 bushels, and there is a proportionate increase by canal and

railroad. The exports in 1854 were considerably less than one million bushels, the estimate for that year being 840,555 tons. A recent statement of the total value of anthracite coal mines in Pennsylvania during the last year puts it at about \$12,000,000; so that we may say that for the one item of coal, Pennsylvania has received in a single year about fifteen millions of dollars.

quirements in a street surface were not better understood.

As to smoothness for the pleasure of riding, the surface of fine cobbles well laid is as comfortable as the Russ pavement.

It affords the best foothold for horses and allows, indeed demands more crowning than any absolutely plain surface.

Is it not possible to have such a pavement with its merits and free from its defects? We think it is and that, at a less cost than the square block.

A bed of concrete should be prepared as a foundation for the stone, crowned in the centre of the street 10 inches for a width of 40 feet. On this the cobble pavement should be set, in accordance with the best rules for laying it in any bottom; it should then be filled with a thin running hydraulic grout to within an inch of the top of the stones.

Care should be taken that the foundation be wet when setting. Hydraulic lime should never be permitted to set dry.

With a pavement like this we should have a pleasantly running road, with a clean surface and an excellent footing for horses.

The desiderata in paving seem to have been appreciated in the designing of the newer forms of iron blocks. In that known as *Terry's* pavement, however, the processes depended on for furnishing foothold are angular and small. They are dangerous to the feet of horses.

The form of block is cylindrical, and has dividing partitions, but it has no flat sides, and the blocks, if in contact at all, are so only at a single point near their top. The upper ends of the cylinders are not closed, and the surface of the pavement consists merely of the corrugated edges of the cylinders and partitions, presenting but a small portion of iron, with all the balance of the surface, comprising 0.9 of it, of earth or other soft filling. It may be called open honey-comb work.

The result is, that no matter what material the cells may be filled with, they become in a short time hollowed out, and are receptacles for mud and water, or dust in dry weather.

The water percolates through the cells, softens the foundation, the blocks settle, and the earth below is forced up.

All the bearing that the blocks have upon the earth below is from the edges of the cylinders and partitions, which, to bring the cost within reasonable limits, are very thin and sharp. More or less settling is inevitable, the amount depending upon the character of the material upon which the edges bear. The system of locking the blocks together is by means of three "lugs" cast upon the upper surface of each block at equal distances around its circumference. These "lugs" project over upon three of the blocks which surround it, the alternate blocks having similar lugs resting upon the first or centre block. Each one is therefore sustained by only three others. It is claimed for this pavement that in order to take up any one block for the purpose of repairs, it is only necessary to turn the three blocks which rest upon the one to be taken up, so as to relieve it from the overlapping lugs.

If the blocks could be turned, the object would be obtained. But it seems to us on an inspection of the pavement that as they are constructed it is

American Railroad Journal.

Saturday, March 15, 1856.

Pavements.

STREET AND RAILROAD.

It would be interesting to note the various expedients that have been resorted to at different times and in various places, for preserving the surface of highways from destruction, as well as insuring a road-bed that shall be pleasant for riding and economical for purposes of draught. Notwithstanding the immense amount of experience we have had to guide us, it is impossible as yet to point out in any street of any town the perfect pavement.

In Europe, they are even worse off than in this country, but more philosophical in submitting to the evil. It is true that in some of the cities on the continent the streets are paved with large flat slabs pleasant to ride over, but unless of great thickness, unsuitable for the purposes of heavy haulage; they are, therefore, never laid down in considerable commercial cities. Such a pavement cannot be crowned in the centre, so that there is little trouble from the falling of horses, while its perfectly even surface sheds the rain.

In some cities, as Edinburgh for instance, the streets are simply McAdamized.

In the United States we have resorted to every conceivable device to perfect this important feature of the public way.

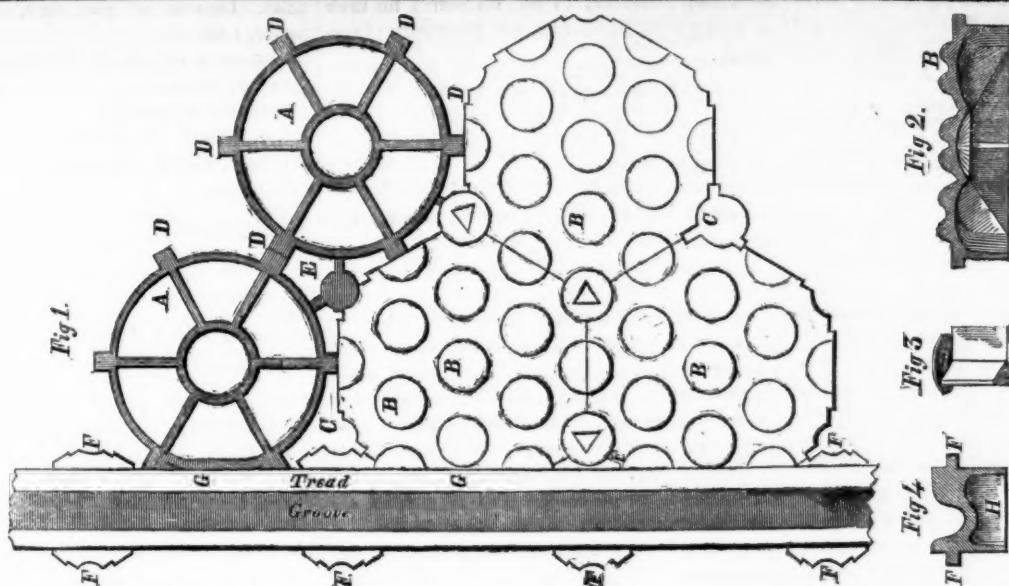
Formerly our streets were paved with cobble stones, a sort that must be of different qualities in the different cities; some locations affording a better pebble than others. The worst possible specimens of this kind of work exist in New York city, a fact to be imputed to the common looseness with which the city contracts are made.

In Boston the cobble pavement has been superior. It is customary to cull the stones, laying the small pebbles in the middle of the street and the larger ones on the sides. Angular stones are not used, but care is taken that only those of a certain regularity, smooth and round, are admitted; they are set upright, with the small end down, upon a bed of sand or fine gravel and are grouted with sand, with which also they are covered to a depth of an inch or two for a few days in order to insure a perfect packing in the interstices.

Some of the finest pieces of this pavement are to be seen in the cities of the Ohio Valley. At Louisville and Cincinnati especially is this work well done.

The objections to the cobble pavement are, that in dry weather it is dusty, in wet weather muddy. Moreover, it is continually sinking in spots, making a rough surface under heavy loads. When omnibus lines run over it in nearly the same routes it is found that constant rutting is made.

If we could have the cobble pavement surface and freed from these objections, we should have all that is desirable, and it is astonishing that when Broadway was so expensively paved, the true re-



an impossibility, and we have been informed though we have not witnessed the process, that where in practice it has been required to remove a block in the centre of the street, it has been found necessary to commence the removal at the curb-stone.

Any one block can only be removed in this way, or by moving a great number laterally, so as to obtain space enough around the block to be raised to relieve it from the lugs. It is evident that if there be space enough between the blocks to permit of this lateral movement, the pavement does not fulfil all the required conditions; for absolute contact is necessary between the blocks to make a perfect pavement, and to make available the advantages of arching the surface. Even if these blocks are at first laid in contact, they touch each other only at a single point near the surface, and the unavoidable motion wears these points off, so that even if the arch form is originally adopted, its advantages are in a short time entirely lost. The penetration of the water through the openings may be found a serious objection, as by it the foundation is softened and injured. An important condition to a good pavement is a thorough surface drainage, protecting the material below.

Independent of all these considerations, the form of surface presented is not that best calculated for the feet of horses. The corrugations in the upper edges of the cylinders and partitions leave square projections like spike heads, which strike the interior of the horse's hoof whenever the shoe is placed in the best position to give a foothold, and if the corrugations are made so shallow as to avoid this difficulty, they will soon wear smooth.

The Russ pavement is an arrangement of stone blocks about 12 inches cube. They are laid on a foundation of concrete close together. They have a grooved upper surface to prevent the slipping of horses. They are a failure. In one respect, a failure as the wooden pavement was. When wet, it is impossible for a horse to maintain his foothold. Such a positive calamity has this defect proved, that very great excitement in the city has been the result.

Looking merely to foothold for horses and ease of draft, there can be no question that, when in

perfect order, a pavement formed of small pebbles of from two to three inches in diameter is altogether superior to any plan yet adopted. The great difficulty is in keeping such a pavement in repair, when subjected to any traffic of consequence.

If such a pavement should be moulded in iron, a great object would be accomplished.

We have just examined a piece of pavement that seems to fill as near as may the demands for a correct pattern. The description will be best understood by a reference to the annexed drawing, on which for the purpose of illustration is introduced a portion of a city rail.

"Fig. 1 is a plan exhibiting several of the blocks in place, and also showing their combination with a rail.

"Fig. 2 is a vertical cross section of one of the cast-iron blocks.

"Fig. 3 is a perspective view of one of the keys used for locking the blocks, and blocks and rails together.

"Fig. 4 is a vertical cross section of the rail.

"The blocks are made of a cylindrical form, the upper end of which is closed, forming the surface. The interior is divided into cells by partitions radiating from near the center to the soffit of the cylinder, as shown in fig. 1, letter A. The cylinders are about four inches in depth, and from twelve to fifteen inches in diameter, but their dimensions may be varied as may be deemed expedient. The upper surface projects slightly out from the circumference of the cylinder, and is covered with circular or irregularly formed bosses or studs, the tops of which are convexed—see figs. 1 and 2, letter B. Each of these bosses covers one of the cells. All the blocks being precisely alike, every one is surrounded by six others, all being in contact. The projecting portions of the top are formed into six tangential sides, not forming an entire hexagon, but leaving interstices as shown in fig. 1, letter C. When the blocks are laid in place, these tangential sides are in contact. On the circumference of each cylinder are formed six vertical ribs, letter D, fig. 1, running down the whole depth of the block, which are also in contact.

"In the interstices, left as previously mentioned, a key is inserted, of the form shown in fig. 3.—The top of this key is formed with a hole for the reception of a wrench, and a turn of one sixth of a circle forces the keys into the position shown in fig. 1, letter E, thus locking the blocks so that any one is sustained by the six that surround it.

"The rails are formed of the section shown in fig. 4, and may be cast of any required length.—

On each side of the rail are formed lugs, F, or they may be formed with a continuous flange, figs. 1 and 4. The blocks laid next the rails are cast with a segment cut off to the line of two keys, as shown in fig. 1, letter C. The lugs on the side of the rails fit into the angular spaces between two blocks, and leave openings for the insertion of the key precisely like those between the blocks marked C. Thus the rails are confined to the blocks and the blocks to the rails in the same manner as the blocks are confined to each other.

"To strengthen the rail, the hollow space on the under side may be formed with cross-partitions at suitable intervals, letter H, fig. 4.

"The whole being thus confined and locked together, no timber substructure is needed; but the rail becomes a part of the pavement itself, and in case a rail is injured or broken, no spikes are to be drawn, but it may be taken out and a new one substituted by simply turning the keys which confine it. The ordinary street railway, in use in ordinary pavements, requires an expensive wooden substructure, which is constantly decaying and needing renewal, and there being no bond between the rail and the pavement, constant repairs are needed to keep both on the same level. Either the rail settles below the pavement or the pavement below the rail, offering serious obstruction to the passing of ordinary vehicles. The combination proposed avoids this difficulty, and presents a railway always upon the same level as the pavement.

"In this pavement large surfaces are brought in contact between any two blocks, and as each block has six flat sides, when once laid in place, the action of vehicles cannot move them. They are readily unlocked and removed by turning ten of the keys, thus releasing two blocks, after which they may be moved laterally."

Their stability, instead of depending upon the thin edges of the cylinders and partitions, depends upon the whole area of the block, and no matter what the material is in which they are laid, they cannot settle. The foundation is protected from the filtering of water through the blocks. The benefits derivable from an arched form, of solid iron, are made available. The surface presents a perfect foot-hold for horses, and of such form that it is impossible for a shoe to be placed upon it in such a way, as to bring the frog of the foot in contact with the bosses—while for the passing of vehicles it is substantially smooth. The material is concentrated in the top surface, presenting a large area for wear, and the bosses are so arranged over the cells, that whenever in process of time they

are entirely worn off—a surface equal to the Terry pavement is still left. It is free from dust and mud, and easily swept and cleaned. The form is one most cheaply moulded and cast, and the surface may be chilled in process of manufacture, increasing its durability. It may be combined with street railways in a simple and perfect manner, so that a pavement with a railway will cost but a fraction more than one without.

This pavement is the invention of Mr. A. P. Robinson, an accomplished Civil Engineer of this city.

Our limits will not permit us to more than mention the pavements used in connection with Railroads, which are for a purpose very different from those of the street. They are used to sublie foundations, and for the finishing of water ways for all shallow rapid streams, where the bottom is solid rock. When placed under the smaller class of culverts, they should be laid level across, extending beneath both walls. Round cobbles or boulders should never be used when they can be avoided; neither should square blocks or slabs. The object in such situations, and when under the abutments of bridges, being to secure equal settlement in the walls, it is necessary that small, wedge-like edges be presented to the ground, so that if there be inequalities in the bottom, they shall not be communicated to a large extent of surface. In addition to which, if the bottom be soft clay, it will be pressed between the different stones securing a uniform hard floor from the wall that may be said to float on the softer substratum.

In large openings where the pavement, instead of paving under the walls, abuts against them, it is customary to sink it in the middle to throw the channel away from the walls. The stones in the pavement of a water way should always lean up stream. This is not the custom with Engineers generally, but is the correct course. We know it by long experience. It would seem a trifling matter, but every Engineer knows something of the vexation of having his culverts washed out, as well as of seeing the stream take its course under the pavement instead of over it. If the stones lean up stream they soon become grouted, the running water forcing pebbles and sand into the crevices. When inclined the other way, it is true they generally become grouted in time—but it is also true, that frequently the water percolates through, and washes out the bottom.

The paving stones of a water way should be higher than their width or thickness, and should be laid with their longest diameter across the stream, and joints carefully broken, so as to be a dam to its progress; they will thus receive the earth washed down until a good, smooth bed is formed for the channel.

No part of bridges or a culvert masonry calls for more care than the pavement.

Backward Motion.

The Pennsylvania House of Representatives some days since passed a bill, *repealing the act which exempted coal and lumber from the tonnage tax!* The vote stood 68 to 23. So the wise men of that body prefer, in order to sustain the canal business, as they imagine, to levy such a tax upon railroad commerce that it must to a great degree leave the State, and go by those avenues both North and South, where it is unobstructed by public toll-gates. Pennsylvania is un-

der a deep obligation to her statesmen for their far seeing political wisdom, and generosity of sentiment!

Railroads in New York.

(Continued from Page 149.)

HARLEM RIVER AND HIGH BRIDGE RAILROAD.

Capital authorized, \$150,000, of which \$15,000 have been subscribed, and \$1,500 paid in. Beyond making the surveys, nothing has been done. The length of the road will be about eight miles.

Clarence Livingston is the Company's Secretary.

BROOKLYN CITY RAILROAD.

Authorized capital, \$2,500,000, which has been reduced to \$1,000,000—all subscribed. The amount paid in is \$902,660. The shares have been reduced from \$25 to \$10 each. One-fourth the number of them was issued as Scrip stock. No funded nor floating debt. Cost of road and equipment, \$844,344. Estimated value, \$910,332. Length, 30 miles, of which 17½ miles are laid, having a double track. Rail, 64 lbs. per yard. Number of houses and shops, 9; of horses and mules, 696; and of passenger cars, 115. Miles run, 1,691,452. Passengers carried, 6,824,559. Earnings, \$332,116. Working expenses not given. One dividend of 3½ per cent. declared. The sum of \$199,170 was applied during the year to liquidating the floating debt. One fatal accident only, resulting from trespassing on the track.

Amos P. Stanton is President; John Schenck, Treasurer; Charles C. Bett, Secretary; Benjamin F. Crane, Engineer, and Montgomery Queen, Superintendent. Principal office at 12 Fulton street, Brooklyn, L. I.

LONG ISLAND RAILROAD.

The authorized capital of this Company is \$3,000,000, which has all been subscribed, and \$1,875,148 paid in. Shares, \$50 each. Funded debt, \$648,533; floating, \$25,416; making a total of \$668,949. The first of these consist of

No. 1.—State loan, \$100,000, at six per cent., issued, July, 1841; due August, 1856. Paid for railroad iron. Sinking fund, \$17,249.

No. 2.—\$25,035, at seven per cent., issued May 1st, 1843; matured, 1849 and '50. Secured by personal property and real estate. Mortgage executed for \$40,000.

No. 3.—\$300, at six per cent., issued December, 1838; due December, 1848. Mortgage executed for \$13,950.

No. 4.—\$500,000, at six per cent., issued 1st January, 1850; due 1st January, 1870. Of these \$122,900 were sold at 90 per cent., and the balance at par. Secured by personal property and real estate.

No. 5.—\$24,004, at six per cent.; not secured by mortgage; due from 1845 to 1858. Of these it is claimed that \$10,805 have been paid but were never crossed from the bond-book.

Cost of road, equipment, &c., \$2,555,986. Estimated value, \$1,717,947. Length of road, 95 miles; of double track and sidings, 2; and of branches, 2½ miles. Rail, 50 and 56 lbs. per yard. Number of engine houses and shops, 14; of locomotives, 20; of passenger, baggage, mail and express cars, 35, and of freight cars, 190. In the length of the road is included that of the Brooklyn and Jamaica road, which is leased. Sum of ascents and descents, 1,332 feet, or 14¾ per mile. Maximum grade, 52 feet for three-fourths of a mile. Sum of straight lines, 89¾

miles. Degrees of curvature, 395. Minimum radius, 1,165 feet. On the Brooklyn and Jamaica road there is a grade of 97 feet per mile, for less than 200 yards.

Miles run by passenger trains, 142,210; and by freight, 82,058. Passengers carried, 374,881; tons of freight, 62,605. The earnings were—

Passengers	.....	.....	\$188,975
Freight	.....	.....	103,585
Other sources	.....	.....	9,233

Total	.....	.....	\$301,793
Trans. expenses	\$185,331

Interest	35,037
Rent of B. & J. Railroad	39,509

Carried to Surplus fund	15,724
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275,601

Balance \$26,192

The greater part of this was applied to the payment of funded and floating debts, and to the sinking fund. No dividends.

One employee and two "others" killed. No blame attached to the Company in any case.

W. E. Morris is President, and W. S. S. Russel, Secretary and Treasurer. Principal office at Brooklyn, N. Y.

LEBANON SPRINGS R. R.

Capital authorized, \$500,000, of which \$400,009 have been subscribed, and \$101,900 paid in. Shares \$100 each. Bonds have been issued to the amount of \$72,000, in payment of work done. Cost of road, &c., \$327,676. Length of road, 22½ miles; of main line from Chatham Four Corners to Bennington, Vt., 52 miles.

Moses Y. Tilden is President; R. C. Root, Secretary and Treasurer; and Martin Green, Engineer. Principal office at 7 Nassau street, New York.

STATEN ISLAND R. R.

Authorized capital, \$300,000, of which \$62,550 have been subscribed, and \$5,221 paid in. There has been paid for engineering and agencies the sum of \$3,118. Length of road, 13¾ miles.

Joseph Seguine is President; Joseph Britton, Treasurer, and L. C. Clark, Secretary. Office at 82 Duane street, N. Y.

ATTICA & ALLEGHENY VALLEY R. R.

This company is no longer in existence. After grading some 25 miles of the line, they became insolvent, and a decree was obtained to sell the interest of the Company on the mortgage.

Amount expended, about \$50,000. Amount of mortgage, \$400,000.

BUFFALO & ALLEGHENY VALLEY R. R.

Capital authorized, \$300,000, of which \$135,000 have been subscribed, and \$16,000 paid in. Amount expended on graduation and masonry \$16,300. Since the work was suspended, in January, 1854, nothing further has been done by the company. An arrangement, however, was made by which the Buffalo and Pittsburgh railroad company were to continue its prosecution. The length of line surveyed is about 30 miles.

Albert L. Baker is President; and A. Riley, Secretary and Treasurer. Office at Aurora, Erie county, N. Y.

SODUS POINT & SOUTHERN R. R.

Authorized capital, \$550,000, of which \$78,260 have been subscribed, and \$31,585 paid in. Floating debt, \$1,850. No funded debt. Amount expended, \$35,198. Estimated value, \$26,735. Length of main line to be 85 miles. Nothing further has been done towards construction during

the past year. No part of the track is laid; about eight miles of the road bed are graded.

Albert Banta is President; Horace Blackman, Treasurer; and Stephen Culver, Secretary. Principal office at Newark, Wayne county, New York.

NEW YORK & WESTERN R. R.

This company was organized in June, 1853, with an authorized capital of \$12,000,000, of which \$2,790,000 were subscribed, and \$27,900 paid in. Since organizing, nothing further has been done, it being discovered that the surveys previously made, by private parties, were altogether fallacious and deceptive.

OSWEGO & TROY R. R.

Capital stock, as by charter, \$2,000,000; am't subscribed, \$231,000; amount paid in, \$28,100. Value of shares, \$100 each. No funded nor floating debt. Expended for engineering and salaries, \$10,368. Estimated length of road, 180 miles.

Lucius B. Crocker is President; Delos De Wolf, Treasurer; L. Babcock, Secretary; and Wm. Parker, Engineer. Office at Oswego, N. Y.

SACKETT'S HARBOR & ELLISBURG R. R.

Authorized capital, \$175,000—all subscribed—of which \$167,485 have been paid in. Shares, \$50 each. Funded debt, \$250,000; floating debt \$56,810; making a total of \$306,810. The bonds consist of first and second mortgage, bearing seven per cent., the former issued in 1852, and the latter in 1854. Dates of payment not given. Cost of road and equipment, \$389,310. Length of road, 18 miles. Rail, 58 lbs. per yard. Sum of ascents and descents, 620 feet, or an average of 34 to the mile. Sum of straight lines, 13 miles. Degrees of curvature, 666. Minimum radius, 1,494 feet. The company own one locomotive and 34 cars of various kinds. Miles run by passenger trains 21,296; and by freight trains, 10,648. Passengers carried, 16,998; tons of freight, 160,707. The earnings were—

Passengers.....	\$4,278
Freight.....	5,120
Other sources.....	1,304
 Total.....	\$10,702
Expenses of operating, &c.....	11,998

Deficit..... \$1,296

No accidents reported.

C. N. Bishop is President; D. B. Kellogg, Secretary and Treasurer; and J. Collamer, Superintendent.

LAKE ONTARIO, AUBURN & NEW YORK R. R.

This company suspended operations soon after last report. The road, then in process of construction, has since been sold on foreclosure of mortgage, to parties who are endeavoring to organize under the act of 1854.

WASHINGTON COUNTY CENTRAL R. R.

Three routes for this road have been surveyed—all contemplating a union with the Troy and Boston and Albany Northern roads. About \$80,000 in cash or "right of way," have been subscribed.

John Lee is President; John T. Masters, Vice President; and Le Roy Mowry, Secretary and Treasurer.

BUFFALO & NEW YORK CITY R. R.

Authorized capital, \$1,500,000, of which \$951,160 have been subscribed, and \$798,489 paid in. Funded debt, \$1,720,000; floating debt, \$867,849; making a total of \$2,587,849. Funded debt bears

seven per cent. interest. Cost of road and equipment, \$3,401,868. Length of line, 91 miles.—Weight of rail per yard, 68 lbs. Number of engine houses and shops, 4; of locomotives, 16; of passenger, baggage and mail cars, 26; and of freight cars, 138. Miles run by passenger trains, 237,828; and by freight, 75,894. Passengers carried, 138,589; tons of freight, 62,162. The earnings were—

Passengers.....	\$125,829
Freight.....	154,809
Other sources.....	7,754
 Total.....	\$288,392
Trans. expenses.....	256,496
 Balance.....	\$31,896

No returns made as to payment of interest, employees, accidents, &c.

ALBANY NORTHERN R. R.

Authorized capital, \$600,000, of which \$445,000 have been subscribed, and \$439,004 paid in. Shares, \$100 each. Funded debt, \$1,578,098, bearing seven per cent. interest. Floating debt, \$50,000. Total debt, \$1,625,098. The bonds consist of the following issues:

No. 1—\$600,000; issued March, 1852, due March, 1867; secured by first mortgage.

No. 2—\$500,000; issued June, 1853, due June, 1863; secured by second mortgage.

No. 3—\$250,000; of which \$110,760 only were sold, and of these, \$65,700 have been redeemed by fourth class adjustment bonds. Date of issue, November, 1853. Bonds mature in 3, 5, and 8 years from date. Secured by third mortgage.

No. 4—\$500,000; to cover city loan of \$300,000, and adjustment bonds to amount of \$200,000. Of the latter only \$64,338 have been sold. Issued May, 1854. Date of maturity not given. Interest six per cent. for first five years, and seven per cent. afterwards. Secured by fourth mortgage.

Cost of construction, equipment, &c., \$1,840,695. Estimated value, \$1,545,000. Length, 32 miles, or including branch line, 32 1/4 miles. Rail used, 65 and 75 lbs. per yard. Number of engine houses and shops, 5; of locomotives, 7; of passenger and baggage cars, 19, and of freight cars, 101. The company lease 17 1/4 miles of the Troy and Rutland railroad.

Sum of ascents and descents, 699 feet, or 11 feet per mile. Maximum grade, 45 feet. Sum of straight lines, 21 miles nearly. Degrees of curvature, 1,426. Maximum radius, 600 feet. Miles run by passenger trains, 106,587; and by freight, 18,525. Passengers carried, 241,151; tons of freight, 45,289. The earnings were—

Passengers.....	\$68,194
Freight.....	44,243
Other sources.....	5,279
 Total.....	\$117,716
Trans. expenses.....	107,812

Balance..... \$9,904

The interest on funded and floating debts was \$34,457, showing a deficit of \$24,553.

One employee and one passenger were killed. Company held free from blame.

Before the completion of this road, its affairs suffered severely by the financial crisis of 1853. In consequence, it passed out of the Company's control into the hands of trustees appointed for that purpose, who have furnished it with additional equipment, and operated it to the present time, in

connection with the Troy and Rutland, also in the hands of receivers. The earnings and expenses above given include those on the latter road.

Geo. II. Thatcher is President; Orland Meads, Treasurer and Secretary; Geo. H. Clarke, Superintendent, and Erastus Corning, John L. Schoolcraft, and Andrew White, Receivers. Office, 552 Broadway, Albany, N. Y.

TROY & RUTLAND R. R.

Authorized capital, \$325,000; subscribed \$265,000; paid in, \$249,939. Shares, \$100 each.—Funded and floating debt not given. Length 17 1/4 miles. Rail, 60 pounds per yard. Orland Meads is President; J. M. Lovett, Secretary and Treasurer; and James B. Jermain, Receiver. Few other particulars given.

Journal of Railroad Law.

IS A COMMON CARRIER LIABLE FOR THE LOSS OF GOODS BEYOND THE LIMITS OF ITS OWN LINE?

(Continued from page 154.)

In this country there has not been the same uniformity in the decisions as in England upon this point. The case of *Weed vs. The Saratoga and Schenectady Railroad Company* reported in our last, was decided in conformity to the English decisions. The fact of a contract by the defendants to carry beyond the terminus of their own road seems to have been assumed by the Court, at the trial, as the basis of the instructions to the Jury, that they were liable for the loss, and upon exceptions to the charge, the instructions were sustained. It does not appear to have been the intention of the Court to decide, that from the delivery of the baggage to be carried to a place beyond their line, they were conclusively presumed to have contracted to carry it the whole of the distance.

In *St. John vs. Van Sartwood*, 25 Wend. 660, the defendants were common carriers from New York to Albany, and they received a box from the plaintiffs in the former place marked for Little Falls, a place beyond Albany, for which they gave the following receipt:

"Received from St. John and Tousey, one box of merchandise, marked J. Pitrie, Little Falls, Herkimer Co."

The defendants delivered the box to the master of a canal boat at Albany, to be carried to Little Falls, receiving pay from the master for their charges for carriage from New York to Albany. The box was lost, and the plaintiffs brought an action, alleging a contract to carry to Little Falls. At the trial, the defendants proved that their delivery of the box to the master of a canal boat at Albany, was in accordance with the usage of tow boats on the Hudson, but they did not prove the usage to be known to the plaintiffs. The plaintiffs objected to the admission of evidence of the usage, unless knowledge of it was brought home to them. The Court charged the jury that there was no evidence of a contract to carry to Little Falls; that none could be implied from the receipt; and that the known usage of trade entered into and formed a part of the contract. Upon exceptions to this charge, the Supreme Court held it to be wrong, that a contract to carry to Little Falls might fairly be inferred from the receipt, though its meaning might perhaps be restricted by proof of the usage brought to the knowledge of the plaintiffs. The decision in effect was, that the evidence ought to have been left to the Jury with instructions to find whether there was in fact a

contract to carry to Little Falls. The case was carried to the Court of Errors, where the decision was reversed, the majority of that Court holding with the judge at the trial, that the receipt would not be construed as a contract to carry the whole distance. Whether the construction put upon the receipt by the Supreme Court or that of the Court of Errors was the true one, the decision leaves the question untouched whether a railway company which contracts to carry beyond its own line, is liable for a loss which occurs upon another road, but within the limits of its contract. See 6 Hill, 157. The courts of New York do not, however, regard this decision as restricting the common law liability of a carrier to the limits of his route as a carrier, when he has contracted to carry further. *Wilcox v. Parmelee*, 3 Sandford, 610.

Richmond, Fredericksburg and Potomac Railroad.

The Richmond, Fredericksburg and Potomac railroad company were incorporated in February, 1834, and authorized with a capital of \$700,000, which might be increased to \$1,000,000, to construct a railroad from the city of Richmond to Fredericksburg, to be extended thence to some point on the Potomac river. Shares, \$100 each. State subscribed two-fifths of the stock, or 2,800 shares. By a special act this was afterwards reduced to 2,752 shares, the excess over three-fifths (48 shares) having been taken by individuals.—Fares not to exceed 10 cents per mile per ton for heavy freight, and 7½ cents for passengers. Directory to consist of five persons, besides the President, two of these representing the State. The charter was made perpetual, and the capital stock and property exempted from taxation. By the 38th section, no line was to be constructed for 30 years, which should reduce their through passenger business between the cities of Washington and Richmond. Permission to borrow money on bond and mortgage was also subsequently granted.

The length of this road from Richmond to Acquia Creek, on the Potomac river, is about 75½ miles, (or, including a branch of 3½ miles, 79 in all,) forming part of the great sea coast line of travel, from the North-eastern States to Charleston, Savannah, and the South-west. On the south this line is prolonged by the Richmond and Petersb'g, the Petersburg and Roanoke, and the Richmond and Danville roads, to the borders of North Carolina. At its northern terminus, it connects, by means of a line of steamboats, with the city of Washington; but a road is already in progress to connect with the Orange and Alexandria road, thus affording a through land route between the cities of Richmond and Alexandria. Twenty-seven miles north of Richmond it is crossed by the Virginia Central, which formerly had its eastern terminus at this point, but now extends into the city of Richmond.

The route is very direct, and on the whole favorable for construction, particularly from Richmond to Fredericksburg. The remainder is more difficult; but the highest summit crossed is not over 120 feet above tide-water; the grades are nowhere above 45 feet to the mile; and the shortest curves have a radius of 1,400 feet. The river crossings are the most formidable obstacles; the principal of these being the Chickahominy, South Anna, North Anna, Mattapony, and Rappahannock—the last requiring a bridge of 600 feet long. The country along the line is among the most fertile, healthy, and populous districts in Virginia.

The company were organized in June, 1835, on

a subscription from individuals of \$305,200; and a Board of Directors chosen, of whom JOHN A. LANCASTER was elected President. The engineering and surveys were put under charge of MUNCURE ROBINSON, who subsequently filled the office of President for many years. The original estimate of cost to Fredericksburg was \$768,182. This included but a moderate equipment and a superstructure consisting of an iron rail $2 \times \frac{1}{2}$, laid upon white oak string-pieces resting upon cross-ties five feet apart. The first locomotives were received from England. In December following, 27 miles, between Richmond and North Anna river, were put under contract; and the remaining distance to Fredericksburg in the year following. In Feby, 1836, a section of 19½ miles, extending to the South Anna river, was opened for public use; and in May following, it was finished to the North Anna; in June, to Chesterfield, 28¾ miles; in August to Mattapony, 36½ miles; in September, to Milford, 39½; and in October, to Downer's Bridge, 46½ miles. The line was completed to Fredericksburg, early in 1837. The gross receipts for the previous year were \$33,280, from which a dividend of 2½ per cent. was declared to the stockholders.

During the same year preparations were made for extending the road from Richmond to some point on the Potomac; and after making the necessary surveys, Acquia creek was selected as the Northern terminus. This was accordingly placed under contract in 1837; but a variety of circumstances concurred to prevent its speedy completion. The contractor failed, and the work had to be relet. That part of the road already in operation required a much larger outlay on construction and equipment, than had been estimated; while the expense of keeping up repairs, owing to the lightness of the superstructure, was very heavy. In May, 1836, the stockholders authorized an increase of stock to the amount of \$300,000; but the State refused to take two-fifths of this as before. The whole was accordingly taken by the old stockholders; but little of the amount was paid in for many years afterwards; and then only on condition of six per cent. interest being paid thereon.

In these circumstances the Board concluded to make an issue of coupon bonds, in order to meet their immediate necessities. Mr. Robinson was accordingly sent to England to negotiate the sale of these, and succeeded in immediately disposing of £20,000 of them at favorable rates, and the remainder in the year following. The whole issue was for £67,500, bearing six per cent. interest, and maturing in 1860, principal and interest payable in London. With the proceeds additional equipment was obtained, and the work of construction proceeded with till its completion in December, 1842.

From their net earnings, the company were enabled, in 1837, to declare a dividend of four per cent., and one of six per cent. in the year following. The rapid depreciation of the track, however, and the application of net earnings to construction, prevented them from declaring any more cash dividends till 1845, when one of three per cent. was paid. Since that date the company have paid seven per cent. every year. In 1844, one of twenty per cent. on the old, and ten per cent. on the new stock, was declared, and made payable in six per

cent. bonds falling due in 1869. Principal and interest were made payable at Richmond. If we add to the above, \$30,000 of six per cent. bonds issued in 1840, and \$60,000 in 1841, for right of way and re-laying part of the line with a heavier track, and \$73,000 of scrip for dividends, issued in 1847 and due in 1856, we have the total bonded debt of the company. The issue of \$80,000 fell due in 1850, and was promptly paid. The other \$60,000 fall due this present year, and are payable at Philadelphia.

On the completion of the road through to the Potomac, an arrangement was made with a steamboat line for the conveyance of passengers and freight between that point and the city of Washington. In 1844, a partial consolidation with the Washington and Fredericksburg Steamboat Company, was effected, the stockholders in the R. R. Co. purchasing half of the steamboat company's stock, and agreeing to pay them one-fourth of the joint earnings. This allowance was subsequently raised to 30, and finally to 33½ per cent.

The company, on several occasions, received authority to increase their capital stock, but have not yet seen fit to do so.

In 1840, the bridge over the North Anna; and in 1847 that over the South Anna, were destroyed by fire. In both cases the thing was believed to be the work of an incendiary.

In 1850, the Company commenced to relay the road with a heavier rail, putting down a flat bar $2 \frac{1}{2} \times \frac{1}{2}$. This was completed two years afterwards. In 1853, the necessity of a still more substantial superstructure having been felt, they made a purchase of rails of the edge pattern, weighing 54 lbs. per yard. The work of re-laying with these has since steadily progressed, and may be expected to be completed at an early day.

With the Louisa (now the Virginia Central) Railroad Company, considerable difficulty has been experienced. On the opening of the first division of that road, in 1837, an arrangement was made by which it was to be operated by the R. F. & P. Co. At a subsequent date, this method was changed, the company deciding to run it on their own account. The charges for conveying passengers between the junction and Richmond still furnished matter for dispute, and on application to the Legislature, the Louisa Company were authorized to construct an independent line their own, which was opened in July, 1847. A long and expensive litigation as to the right of the latter to carry passengers on this part of their road, was decided in 1851, by a majority of the Supreme Court, in favor of the Virginia Central Company.

Annexed we give a statement of the Company's general account, on the 31st of March, 1855:

Cost of road and equipment.....	\$1,708,169
Surveys to Manassas.....	2,241
Bills and accounts receivable.....	154,471
Investments in other companies.....	73,797
Cash on hand.....	9,097
	\$1,947,775
Capital paid in by State.....	\$275,200
Do do by individuals.....	724,800
Sterling bonds, due 1860.....	324,005
Bonds due in 1856.....	60,000
Scrip dividends due in 1856 and 1869.....	268,936
Bills and accounts payable.....	84,565
Profit and loss.....	210,269
	\$1,947,775

The following table shows the cost, gross and net earnings, and dividends of this company, from the opening of the first division to 1854. The report for last year has not yet been published.—The several years end on the 30th September.

Year.	Gross Cost.	Receipts.	Net Earnings.	Rate of Div'd.
1836....	\$795,253	\$43,655	\$18,458	2½
1837....	974,452	*85,249	*35,548	4
1838....	1,017,065	133,699	48,226	6½
1839....	1,055,186	*158,328	*34,013	none.
1840....	1,169,353	175,618	23,070	none.
1841....	1,259,984	185,867	59,743	none.
1842....	1,387,525	157,017	76,870	none.
1843....	1,421,600	161,605	89,285	none.
1844....	1,439,740	185,965	96,326	none.
1845....	1,454,371	188,925	98,856	3
1846....	1,458,219	206,689	108,776	7
1847....	1,474,004	212,048	122,208	7
1848....	1,478,916	178,412	81,390	7
1849....	1,483,199	217,100	100,330	7
1850....	1,509,959	268,669	164,041	7
1851....	1,531,238	243,732	123,584	7
1852....	1,531,238	237,891	93,991	7
1853....	1,531,238	249,691	115,795	7
1854....	1,690,618	246,641	116,685	7

* For eleven months only.

Railroads in Canada.

The total number of miles of railroad now open for traffic, in Canada, is 1,031, as follows: Grand Trunk, 404 miles; St. Lawrence and Champlain, 45; Montreal and N. Y., 28; Prescott & Ottawa 50; Coburg & Peterboro, 28; Ontario, Simcoe, and Huron, 95; Buff., Brantf'd, & God'ch, 80; Great Western and branches, 285; Erie and Ontario, 17. All these railways, except the St. Lawrence and Champlain, the New York and Montreal, and the Prescott and Ottawa, are on the five feet six inch, or "national or Canadian" gauge. The lines just mentioned are on the English narrow gauge. The amount of railway to be opened in 1856 is about 830 miles.

Extension of the Northern Central Railway.

The contractors for extending the line of this railway to Millersburg, on the one hand, and to tide-water at Canton, on the other, have already commenced their operations at various points. Six hundred men are now working on the extension of the road between Bridgeport and Dauphin, while at this end of the line Messrs. Burke and Lauman have one party of laborers employed in the neighborhood of Canton, and another about a mile north of the Bolton depot.

The entire line of route will be pushed forward energetically to its completion, as soon as the cession of the right of way is satisfactorily arranged.

Railroad Iron.

1,000 TONS 57 lbs. weight on hand and for sale by THEODORE DEHON,
10 Wall st., near Broadway, N. Y.
March 13th, 1856. 411

THE GREATEST INVENTION OF THE DAY.

BUSSE'S PATENT

RAILROAD SIGNAL

for Draw-bridges, Curves, and Crossings, is now for SALE, and will be on exhibition for several days at the Merchant's Hotel, Courtlandt st., where the undersigned respectfully invites Railroad officers and travelers to call and see what may be done for their profit and safety. He also invites criticism from scientific Engineers and practical Machinists, as well as those who wish to embark in a profitable speculation. The Signal cannot be superseded by simplification or improvement. A. L. GERHART.

Lowell Machine Works.

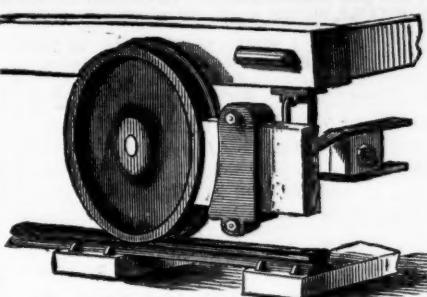
WARREN ALDRICH (late ALDRICH, TYNG & CO.) manufacture and furnish to order, at short notice,

Machinists' Tools

of various description and with the latest improvements; as engine lathes, with swing 16, 20, 24, 28, 30, 36, 48 inches, up to 72 feet, and bed made to turn any desirable length; planing machines, to plane 3 1/4, 6, 8, 10, 12, 18, 20, 22 feet long, and 18, 24, 28, 36, 40, 48, 60 inches square; also hand lathes, compound planers, slotting and shaping machines, vertical drills, bolt cutters, and many other tools used in railroad repair and machine shops.

Lowell, Mass., Jan'y 1, 1856.

PAIGE'S ADJUSTABLE CAR BRAKE BLOCKS!



By this improvement the brake heads or shoes are separate, removable, and adjustable blocks of hard wood canting, clamped by a face plate or cap to suitable sockets on the ends of the brake beams. The end of the grain of the wood is presented to the wheel, and as the shoes wear, they can be set up to any required amount by loosening the face plate of the socket. The ordinary brake heads now in use must be replaced by new ones when they become a trifle worn. The present improvement obviates the necessity of this renewal, also that of shoeing the brakes with leather or iron. By using the end of the grain of the wood, a large amount of friction is had without danger of fire.

The NEW YORK ADJUSTABLE BRAKE COMPANY

are now prepared to apply this improvement on trial to cars in any part of the country, and no sales will be pressed until entire satisfaction is given.

The Brake is now in use on the HUDSON RIVER, HARLEM, BOSTON & LOWELL, and RUTLAND & BURLINGTON RAILROADS, and we invite Railroad Companies generally, through their Agents, to examine the practical working of this new and decided improvement upon all Brake Blocks now in general use.

Please address C. DINSMORE, Agent.

DINSMORE'S RAILWAY GUIDE Office, 9 Spruce st., N.Y.

Lord & Wright,

Counsellors at Law, Cincinnati, Ohio.

1st

New York and Erie R. R.

On and after Monday, Dec. 31st, 1855, and until further notice

PASSENGER TRAINS will leave Pier foot of Duane street, as follows, viz:—

BUFFALO EXPRESS, at 7 a.m., for Buffalo direct, without change of baggage or cars. At Hornellsville this Train connects with a Way Train for Dunkirk and all stations on the Western Division.

MAIL, at 8 1/4 a.m. for Dunkirk and Buffalo, and intermediate stations.—Passengers by this train will remain over night at Owego, and proceed the next morning.

NEWBURGH EXPRESS, at 4 p.m., for Newburgh direct, without change of cars.

ROCKLAND PASSENGER, at 4 p.m., via Suffern's, for Piermont and intermediate stations.

WAY PASSENGER, at 4 p.m., for Otisville and intermediate stations.

NIGHT EXPRESS, at 5 p.m. for Dunkirk and Buffalo.

EMIGRANT, at 5 p.m., for Dunkirk and Buffalo and intermediate stations.

No Train will leave on Sundays.

These Express Trains connect at Elmira, with the Elmira & Niagara Falls Railroad, for Niagara Falls, at Buffalo and Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Toledo, Detroit, Chicago, etc.

1st. D. C. McCALLUM, General Supt.

Philadelphia, Wilmington & Baltimore Railroad.

UNITED STATES MAIL ROUTE TO THE SOUTH AND WEST.

Trains will leave the Southern and Western Station, corner of Broad and Prime streets, Philadelphia, at 8 30 am. 12 45, 3 and 1 pm.

FARE BY THROUGH TICKETS TO THE SOUTH.

From New York to Wilmington	\$15 50
do do Norfolk	8 50
From Philadelphia to Wilmington	14 00
do do Norfolk	6 50
do do Petersburg	9 00
do do Richmond	8 00
FARE BY THROUGH TICKETS TO THE WEST.	
From New York to Cincinnati	\$13 50
do do Louisville	14 50
From Philadelphia to Cincinnati	11 00
do do Louisville	12 00
From New York to Indianapolis	16 00

An extra charge will be made for meals and state rooms on board the boat.

GEORGE A. PARKER, Supt.

NEW YORK IRON PAVEMENT AND STREET RAILWAY CO.

Office Nos. 8 and 10 Wall st.,
ROOM 16.

TO THE
MUNICIPAL AUTHORITIES OF THE SEVERAL
CITIES OF THE UNITED STATES,
AND TO
RAILROAD COMPANIES

AND OTHERS INTERESTED.

THE above-named Company, established in the City of New York, offer you in

ROBINSON'S IRON PAVEMENT,

1st. The cheapest pavement ever used, because most enduring at least cost of repair.

2d. The safest pavement for either man or beast to travel on.

3d. The most economical pavement, because the wear and tear of both beasts and vehicles, of pleasure and burthen, are less upon it than upon any other in use.

4th. The most beautiful pavement to look upon, because the most cleanly and variegated, and free from dust.

5th. The easiest and least tiresome pavement to ride upon, because most even of surface.

6th. The least noisy pavement to use or reside near.

7th. The best pavement ever used, everything desirable considered.

This Company is enabled to furnish cities and others with an Iron Pavement for every use, at a reduced price. They will contract to lay it down upon any graded street, of superior strength, beauty, and perfection to that recently laid down in Boston, or that in Nassau street, fronting the Post Office, in this city, for

\$5 to \$6.50 PER SUPERFICIAL YARD,

in substitution for any existing pavement. This price is over \$4 per square yard less than the first laid down in Boston cost that city; AND \$1 LESS PER YARD THAN THAT RECENTLY LAID DOWN IN BOSTON COST; AND IS \$1 PER SQUARE YARD LESS THAN THE RUSS PAVEMENT HAS COST, that has so beautified, yet rendered most dangerous and expensive to man, and beast, and vehicle, a large extent of Broadway, and some other streets of New York city.

This pavement is also the best and cheapest for all railroad tracks, where horses are employed, and for all highway railroad crossings, now usually made of plank, which are subject to constant disorder and repair.

Lighter and less expensive patterns (averaging from \$1 TO \$3 PER YARD) are furnished for walks in public parks and grounds, also for side walks, private lanes, yards, foot-ways, cellars, and approaches to stables—each being most permanent, cleanly, and ornamental.

In every case ENTIRE SATISFACTION WILL BE GUARANTEED to all purchasers with whom contracts shall be made for laying down this pavement.

FOR A SMALL ANNUAL PER CENTAGE ON THE COST OF LAYING DOWN, CONTRACTS WILL ALSO BE MADE FOR KEEPING THIS PAVEMENT IN REPAIR FIVE, TEN, OR TWENTY YEARS, OR EVEN FOR A LONGER PERIOD.

The municipal authorities of cities, and directors of railroad companies, and all enterprising citizens who wish to blend utility with embellishment of their private grounds, residences, &c., are specially invited to investigate this subject. The surpassing usefulness of the Iron Pavement has been too well established in the public streets of Boston as well as in a section of Nassau street, in this city, to require experiment or argument to uphold it.

All additional information that may be desired will be promptly communicated, and orders promptly executed, by letter or in person, to the undersigned, GENERAL MANAGERS OF THE COMPANY'S BUSINESS, AT THEIR OFFICE IN THIS CITY, NOS. 8 AND 10 WALL STREET.

We are also allowed to refer for general information on the subject, to the gentlemen whose names are subjoined, as Honorary and Consulting Directors, not interested as shareholders in the Company's business.

SMITH, ELEVETH & ROBINSON,

General Managers for the Iron Pavement and Street Railway Company.

HONORARY AND CONSULTING DIRECTORS.

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CHARLES MONROE, Esq., Baltimore, Md.

DAVID BURBANK, Esq., Detroit, Mich.

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L. L. SADLER, Esq., Treasurer of Union Telegraph Company, Boston, Mass.

HON. H. F. FRENCH, Associate Judge, Superior Court, Exeter, N. H.

HON. JOHN M. WOOD, (Member of Congress,) Portland, Me.

**SALE OF THE
MAYSVILLE & LEXINGTON R. R.,**
with all its Property and Franchises, Locomotives, Cars, &c.
JAMES PUNNETT and others, plaintiffs, against THE
MAYSVILLE & LEXINGTON RAILROAD COMPANY
and others, defendants.—By virtue of the Judgment of the
Fayette Circuit Court, rendered in the above case, I will sell,
at public auction, on Wednesday, the 23rd day of April, 1850,
at the Public Square, in the City of Lexington, State of Kentucky—

THE MAYSVILLE & LEXINGTON RAILROAD;
both that part of the road which is completed and the part
unfinished; embracing the road bed, and superstructure where
the same is laid down, the right of way, and all lots of land in
and adjacent to the road track, with all the buildings, stations,
car-houses, and improvements belonging to said railroad,
together with the franchises of the Maysville and Lexington
Railroad Company; all of which will be sold together, upon
credits of six, twelve, eighteen, and twenty-four months, in equal
instalments.

At the same time and place, I will also sell all the Lots of
Land belonging to said Company, and not adjacent to the rail-
road track—consisting of a lot of land in the City of Lexington,
a tract of land in Fleming County, and town lots in Paris and
Millsburg, on credit of six and twelve months, in equal
instalments.

And at the same time and place, I will sell all the Locomotives,
Freight and Passenger Cars, Cross-Ties, &c.—consisting in
part of two locomotives and tenders of twenty-four tons
each, three passenger cars for sixty passengers each, one en-
tirely new and all in good order; seven box freight cars, eleven
platform cars, eleven tops for platform cars, five gravel cars,
and a top for another; fifteen pairs of car wheels, a hand car,
a lot of bridge and car irons; 9,500 cross-ties near Maysville,
1,380 of which are of locust and the remainder of oak; about
6,000 cross-ties along the line of the railroad between Lexington
and Millsburg. The new passenger car, two freight cars,
and the tops for platform cars, are in Maysville, all the other
rolling stock is in Lexington, and the whole is of 4 feet 8 1/2
inches gauge. All to be sold on a credit of six months.

The purchasers will be required to execute bonds for the
purchase money, having the force of Judgments, with good
security, to be approved by me, of one of the following kinds,
to wit:—1. Personal security. 2. First Mortgage Bonds of
the Maysville and Lexington Railroad Company. 3. Mortgages
in real estate in counties near this railroad or the Covington
Railroad. 4. State and United States Bonds. 5. A First
Mortgage on a productive railroad.

The property will be exhibited to all persons desirous of pur-
chasing, by the undersigned, who will be found in Lexington,
Ky., or by A. M. JANUARY, at Maysville. Letters of enquiry,
addressed to me, will be attended to.

EBEN MILTON,
Receiver and Comm'r,
LEXINGTON, Kentucky

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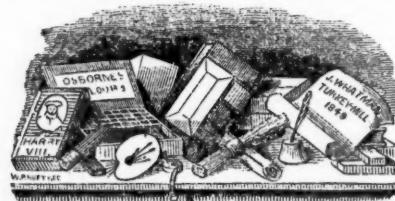
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LONDON, Oct. 1855. 6m48

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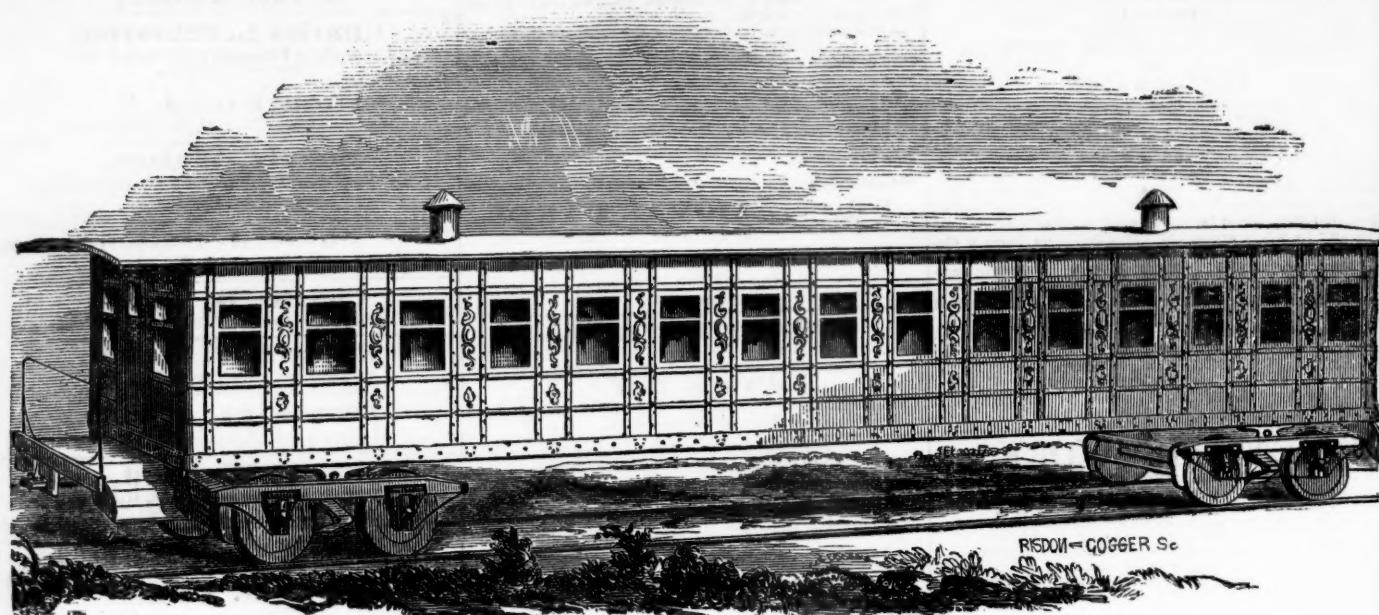
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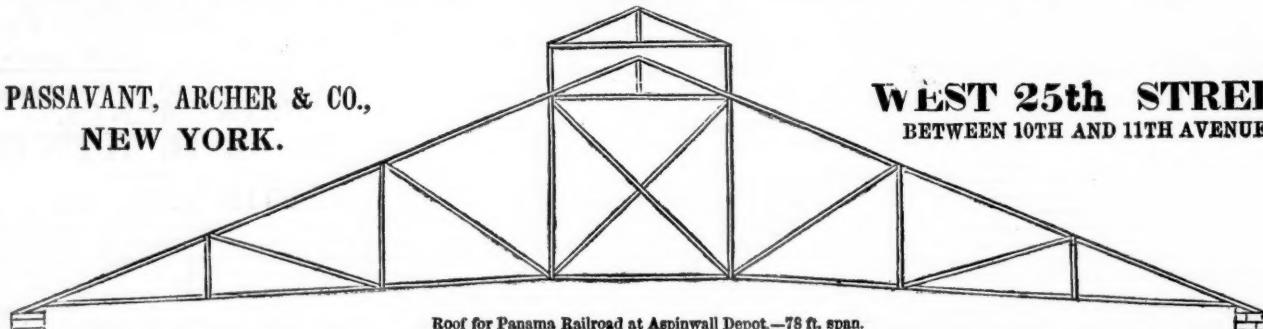
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